CONSTRUCTION PLANS FOR:

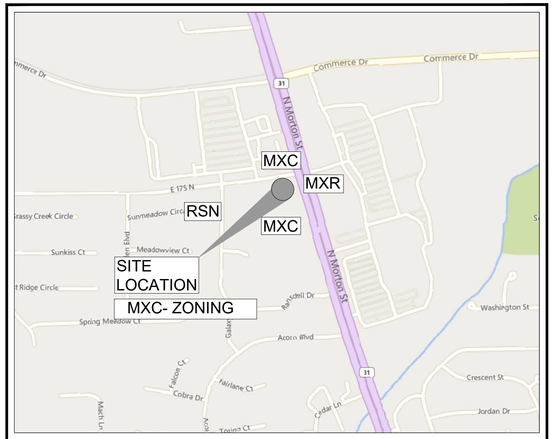
BDH REALTY CAR WASH

2140 N MORTON ST.

FRANKLIN, JOHNSON COUNTY, INDIANA

SECTION 10, TOWNSHIP 12N, RANGE 4E

SITE LOCATION MAP



SITE VICINITY & ZONING MAP

PLANS PREPARED FOR:

BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227
Contact Person: John Haines
317-716-6636
JHAINES@DRIVEHUBLER.COM

OPERATING AUTHORITIES

CITY OF FRANKLIN PLANNING
70 E. Monroe St.
Franklin, In. 46131
(877) 736-3631

CITY OF FRANKLIN ENGNEERING
70 E. Monroe St.
Franklin, In. 46131
(877) 736-3631

CITY OF FRANKLIN STREET DEPT.
2871 N Morton St
Franklin, IN 46131
(317) 736-3660

CITY OF FRANKLIN STORMWATER
796 S State St
Franklin, IN 46131
(317) 736-3640

VECTREN
1630 N. Meridian
Indianapolis, Indiana 46202
(317) 718-3604

COMCAST
5330 E. 65th Street
Indianapolis, IN 46220
(317) 275-6356

AT&T
240 N. Meridian Street
Indianapolis, Indiana 46204-1915
(317) 722-2299

DUKE ENERGY
1000 East Main Street
Plainfield, Indiana 46168
(800) 521-2232

ZAYO BANDWIDTH
1805 29th St, Suite 2050
Boulder, CO 80301
(866) 364-6033

CENTURYLINK
1147 N Morton Street
Franklin, IN 46131
(317) 561-5166

JOHNSON COUNTY R.E.M.C.
750 International Drive
P.O. Box 309
Franklin, Indiana 46131
(317) 736-6174

INDIANA AMERICAN WATER
153 N. Emerson avenue
Greenwood, Indiana 46143
(800) 492-8373

GENERAL NOTES

1. The construction plans shall govern over any other form of media, which includes digital files of this project.
2. The contractor shall be responsible for obtaining or verifying that all permits and approvals are obtained from the respective city, county, state & federal agencies prior to starting construction.
3. It shall be the contractors responsibility to determine the exact location of all existing utilities in the vicinity of the construction area prior to starting construction. Once all utilities have been located, it will be the contractor's responsibility to maintain in service all existing utilities encountered during construction unless otherwise indicated in the construction drawings.
4. Before working with or around existing utilities, the applicable utility company shall be contacted by the contractor. It shall be the contractor's responsibility to notify and coordinate construction with all respective utilities.
5. All construction methods and materials must conform to current standards and specifications for the governing municipality requirements.
6. Maintenance of traffic needed for this project shall be installed and maintained per INDOT specifications and the indiana MUTCD Manual.
7. The contractor shall be responsible for all field dimensions and shall verify all dimensions on the site prior to start of construction. If any discrepancies are found in these plans from actual field conditions, the contractor shall notify the engineer immediately.
8. All quantities given on these construction plans or in the scope of work section are estimates and shall be confirmed by the bidding contractors.
9. It shall be the responsibility of the developer and contractor to maintain quality control throughout this project.
10. Bearings, dimensions, and easements are shown for reference only. See record surveys and plats for exact information.

FLOOD ZONE:

The project site is located within the FEMA Community Panel Map #18081C0139D dated August 2, 2007. Review of the map indicates the site is located within the Flood Designation 'Zone X' (unshaded). The proposed improvements are not located in Special Flood Hazard Area and are therefore not subject to Flood Control Ordinance requirements.

CITY OF FRANKLIN CONSTRUCTION STANDARDS AND SPECIFICATIONS, LATEST EDITION, TO BE USED AS SUPPLEMENTAL INFORMATION WITH THESE PLANS.

INDIANA STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION, TO BE USED AS SUPPLEMENTAL INFORMATION WITH THESE PLANS.

SITE DATA:

TOTAL SITE ACREAGE - 6.50 AC
TOTAL ACREAGE OF DISTURBANCE - 6.0 AC
GROSS SQUARE FOOTAGE OF BUILDING
MULTI-TENANT- 11,000 SF
DRIVE THROUGH RESTAURANT TENANT - 2,000 SF

PROPOSED CONSTRUCTION START - FEBRUARY 1, 2021
PROPOSED CONSTRUCTION END - NOVEMBER 1, 2021
WORK IS SCHEDULED TO BE COMPLETED IN ONE CONTINUOUS CONSTRUCTION PHASE

BENCHMARK:

BENCH MARK (NAVD88):
TBM 1: 756.76' - MAGNAIL SET ±1' AG IN N SIDE OF PWP AT N END OF SITE
TBM 2: 758.72' - CUT "X" ON LIGHT POLE BASE SOUTH END OF SITE

PLAN SHEET LIST

Fritz Engineering Services, LLC
14020 Mississinewa Drive
Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

PRELIMINARY NOT FOR CONSTRUCTION
ASHTON D. FRITZ
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

PROJECT:
BDH REALTY CAR WASH
PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003
SHEET NAME: **COVER SHEET**
SHEET NO. **C100**

SOIL MAP

ABBREVIATIONS AND TERMS

IE/INV	= INVERT ELEVATION
TC	= TOP OF CURB
RIM	= RIM / TOP OF CASTING
GUT	= GUTTER
RCP	= REINFORCED CONCRETE PIPE
HDPE	= HIGH DENSITY POLYETHYLENE PIPE
SSD	= SUB-SURFACE DRAIN
UD	= UNDERDRAIN
MH	= MANHOLE
STR	= STRUCTURE
RD&UE	= REGULATED DRAIN AND UTILITY EASEMENT
D&UE	= DRAINAGE AND UTILITY EASEMENT
SD&UE	= SANITARY, DRAINAGE, AND UTILITY EASEMENT
W&UE	= WATER AND UTILITY EASEMENT
SE	= SANITARY EASEMENT
SAN	= SANITARY SEWER
HC	= HANDICAP RAMP
ME	= MATCH EXISTING
STM	= STORM SEWER
MPE	= MINIMUM PAD ELEVATION
NP	= NORMAL POOL
ELEV	= ELEVATION
TYP	= TYPICAL
PR	= PROPOSED
EX	= EXISTING
R	= RADIUS
B-B	= BACK TO BACK
ROW	= RIGHT OF WAY
LF	= LINEAR FEET
DE	= DRAINAGE EASEMENT

SURVEY/EXISTING CONDITION LEGEND

SECTION MONUMENT	UTILITY POLE	FIRE HYDRANT
BENCHMARK	STRAIN POLE	WATER MANHOLE
ROW MONUMENT	POWER POLE	WELL
PROPERTY MONUMENT	LIGHT POLE	WATER VALVE
STAND PIPE	TELEPHONE POLE	SPRINKLER VALVE
POST	GUY POLE	SPRINKLER
AIR CONDITIONER	TELEPHONE BOOTH	WATER SPIGOT
STORAGE TANK	TELEPHONE RISER	MONITORING WELL
SEPTIC TANK	TELEPHONE MANHOLE	WATER MATER
GREASE PIT TANK	CABLE RISER	GAS MANHOLE
FOUNTAIN	CABLE MANHOLE	GAS STORAGE WELL
SHRUB	LOOP DETECTOR	GAS METER
STUMP	LOOP DETECTOR HOUSING	NATURAL GAS WELL
SATELITE DISH	SANITARY MANHOLE	GAS VALVE
ANTENNA	WET WELL	PROPANE TANK
COAL CHUTE	LIFT STATION	PETROLEUM TEST WELL
GUY WIRE	FORCE MAIN MANHOLE	PETROLEUM VALVE
SIGN	CLEAN OUT	TRAFFIC MANHOLE
CROSS LIGHT	COMBINATION MANHOLE	HAND HOLE
GROUND LIGHT	STORM MANHOLE	CONTROLLER CABINET
FLAG POLE	CURB INLET	TRAFFIC SIGNAL
MAST ARM POLE	CATCH BASIN	ELECTRIC MANHOLE
	DROP INLET	ELECTRIC RISER
	END SECTION	ELECTRIC METER
	FLAP GATE	TRANSFORMER
	DOWN SPOUT	ELECTRIC OUTLET
BARB-WIRE FENCE	TV	CABLE TV LINE**
WOOD FENCE	E	ELECTRIC LINE**
RAIL WOVEN FENCE	FO	FIBER OPTIC LINE
CHAIN-LINK FENCE		STORM SEWER
IRON FENCE		SANITARY SEWER
PRIVACY FENCE	FM	FORCE MAIN
GUARD RAIL	G	GAS LINE
FLOW LINE	T	TELEPHONE LINE**
TREE/SHRUB LINE	W	WATER LINE

**PREFIX FOR UTILITY LINES:
UG - UNDERGROUND
OH - OVERHEAD

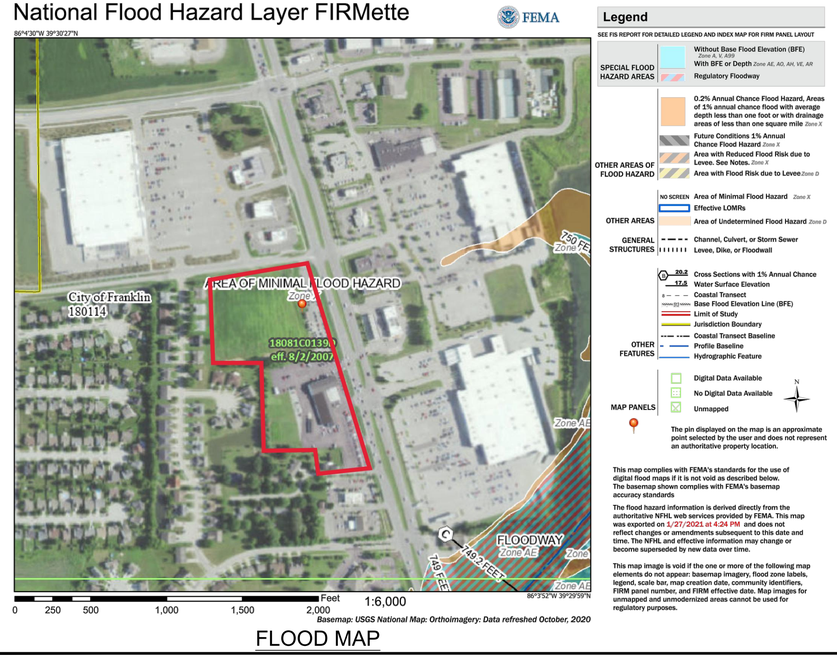
PROPOSED LEGEND

HYDRANT	FLOW LINE, PAVEMENT
VALVE	FLOW LINE, SWALE (GRASS
TEE	FD	FOUNDATION DRAIN
ADAPTER	TV	CABLE TV LINE**
BEND	E	ELECTRIC LINE**
TEMP. FLUSH HYDRANT	FO	FIBER OPTIC LINE
BLOW-OFF		SUB-SURFACE DRAIN
THRUST BLOCK	UD	STORM UNDERDRAIN
PLUG		STORM SEWER
REDUCER		SANITARY SEWER
M.J. SLEEVE	FM	FORCE MAIN
CROSS	G	GAS LINE
WATER METER	T	TELEPHONE LINE**
POST INDICATOR VALVE	W	WATER LINE
FIRE CONNECTION	8"W	
TRANSFORMER PAD	**PREFIX FOR UTILITY LINES: UG - UNDERGROUND OH - OVERHEAD
RELOCATED ELECTRIC/TELEPHONE POLE	
SIGN	
HANDICAP PARKING	FLOW ARROW
CLEAN OUT	EXISTING CONTOURS
STORMTECH STORM CHAMBER	PROPOSED CONTOURS
SANITARY MANHOLE	FLOW LINE ELEVATION
STORM MANHOLE	SPOT ELEVATION
STORM COMBINATION INLET	HIGH POINT ELEVATION
STORM GRATE INLET	LOW POINT ELEVATION
STORM BEEHIVE/YARD DRAIN	TOP/BOTTOM CURB ELEVATION
STORM END SECTION	TOP/BOTTOM WALL ELEVATION
BMP/AQUA-SWIRL	
STORM STRUCTURE NUMBER	ME - MATCH EXISTING GRADE

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Br	Brookston silty clay loam, 0 to 2 percent slopes	2.1	18.6%
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	2.0	17.9%
UbaA	Urban land-Brookston complex, 0 to 2 percent slopes	3.0	26.1%
UcfA	Urban land-Crosby silt loam complex, fine-loamy subsoil, 0 to 2 percent slopes	3.2	27.8%
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	1.0	8.9%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	0.1	0.8%
Totals for Area of Interest		**11.4**	**100.0%**

SOILS UNIT LEGEND



FLOOD MAP

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS: Without Base Flood Elevation (BFE) Zone A, V, A99; With BFE or Depth Zone AE, AO, AH, VE, AR; Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD: 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X; Future Conditions 1% Annual Chance Flood Hazard Zone X; Area with Reduced Flood Risk due to Levee. See Notes. Zone X; Area with Flood Risk due to Levee Zone D
- OTHER AREAS: NO SCREEN Area of Minimal Flood Hazard Zone X; Effective LOMRs; Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES: Channel, Culvert, or Storm Sewer; Levee, Dike, or Floodwall
- OTHER FEATURES: 20.2 Cross Sections with 1% Annual Chance; 17.5 Water Surface Elevation; Coastal Transect; Base Flood Elevation Line (BFE); Limit of Study; Jurisdiction Boundary; Coastal Transect Baseline; Profile Baseline; Hydrographic Feature
- MAP PANELS: Digital Data Available; No Digital Data Available; Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/27/2021 at 4:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

SURVEY NOTES:

1) The utilities indicated on these construction plans and on the survey may not be a compete inventory of all existing utilities currently on or near the site. The size and location of these utilities may be approximate. The engineer shall not be held liable for any inaccurate utility information indicated, or not indicated on this survey.
2) Topographic information provided herein was obtained by field work performed by another firm and provided to Fritz Engineering Services, LLC. Fritz Engineering Services, LLC shall not be responsible for any existing conditions shown within this set of plans.

DEMOLITION NOTES:

1) It shall be the responsibility of the contractor to remove any materials and/or structures not located on this survey.
2) It shall be the responsibility of the contractor to verify all existing utilities and their locations pertaining to their phase of work, and to verify which utilities will be removed by the utility company. Any and all utilities not removed by the utility company shall be removed by the contractor.
3) Utility locations shown are approximate and shall be relocated and/or capped at the Right-Of-Way line and abandoned before construction at no additional cost to the owner.
4) The owner gets the first right of salvage.
5) All demolition material not being salvage shall be properly disposed of offsite by the contractor.
6) The contractor shall obtain all demolition permits required by the local and state agencies.
7) The contractor shall maintain streets and shared drives free and clear of sediment and debris.
8) The contractor is responsible for the protection of all existing utility lines unless otherwise stated.
9) Contractor shall coordinate all temporary shut down of existing utility services with the appropriate utility department, owner, authority, etc.
10) Contractor shall coordinate any necessary street or drive closures required.

SITE/LAYOUT NOTES:

1) See architectural plans for all building dimensions. Any dimensions shown herein shall be considered conceptual.
2) All dimensions are to edge of pavement or face of curb, unless noted otherwise.
3) All dimensions are to face of brick or facing material, unless noted otherwise.
4) All parking area stripes are to be 4" white paint. Handicapped parking areas and access aisles shall be 4" blue paint.
5) Provide smooth transitions from new areas to existing features as appropriate.
6) The edge of existing asphalt pavement shall be properly sealed with a tack coat material in all areas where new asphalt pavement is indicated to join existing pavement.
7) Provide chamfer ends at curbs.
8) Verify sign locations & sign requirements with local governing municipality.

GRADING NOTES:

1) Earthwork & grading shall not start until erosion control measures have been properly installed.
2) Occupational safety and health administration (OSHA) standards for excavations; final rule 29 cfr part 1926, subpart "p" applies to all excavations exceeding five (5) feet in depth.
3) Provide positive drainage that assures no ponding in all areas. After installation, contractor to test for, and correct, in any, standing water conditions are present.
4) All proposed spot elevations are the final pavement and grade elevations. See appropriate details and specifications to determine the subgrade elevations below finish grade elevations for construction.
5) All sanitary manholes in non-paved areas shall be 3" above grade.
6) The maximum slope to be used in non-paved areas shall be 3:1.
7) All A.D.A. parking spaces & access aisles shall be level with surface slopes not to exceed 2% (1:50) in any direction as which to comply with A.D.A requirements.
8) All sidewalks cross slopes shall not exceed 2% (1:50) unless noted otherwise.
9) Provide smooth transitions from new areas to existing features as appropriate.

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2 WORKING DAYS BEFORE YOU DIG.

Fritz Engineering Services, LLC
14020 Mississinewa Drive
Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

SHILOH PRELIMINARY NOT FOR CONSTRUCTION PROFESSIONAL ENGINEER

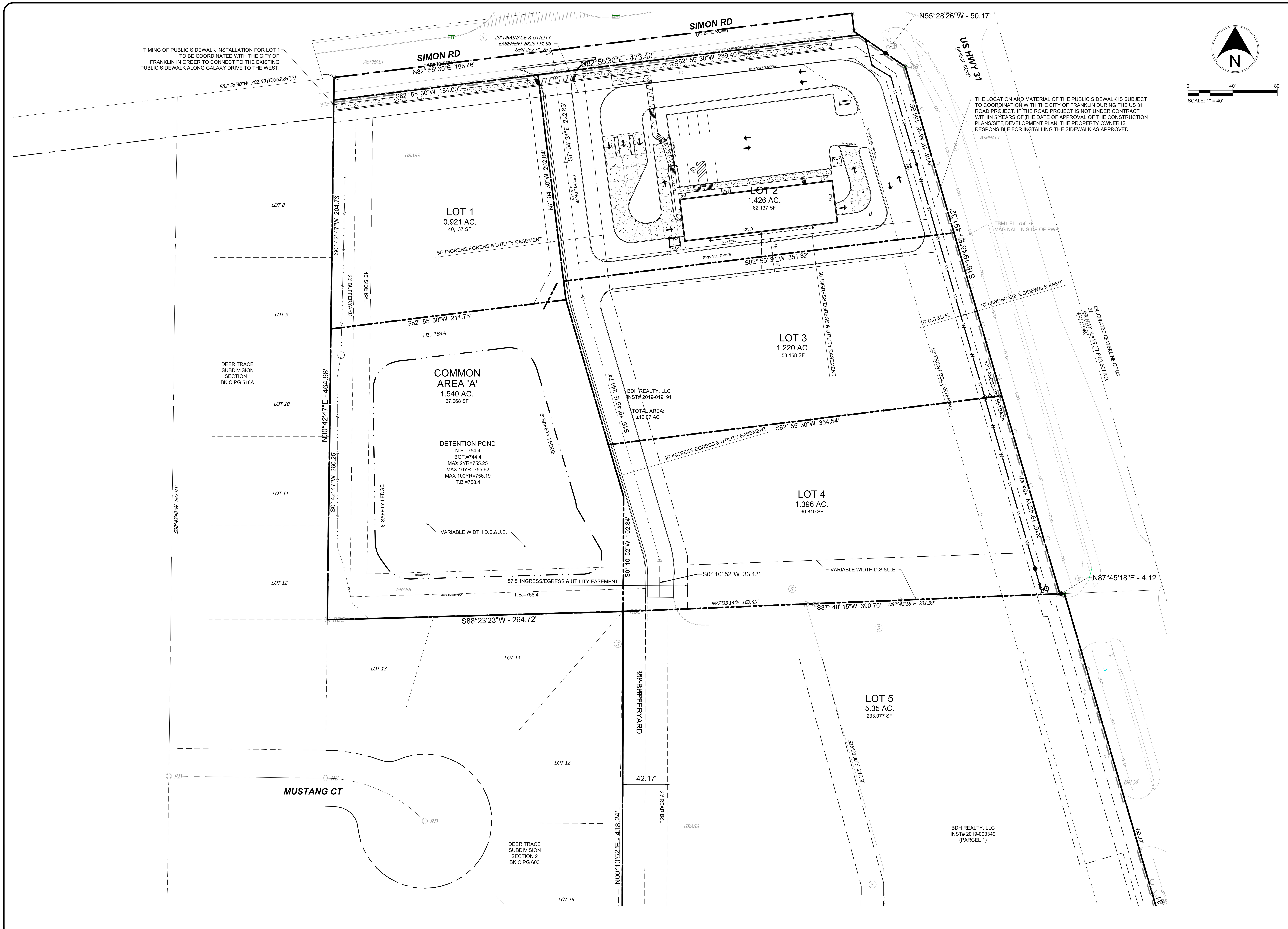
REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

PROJECT:
BDH REALTY CAR WASH
PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021
DESIGN: AF | CHECK: AF | DRAWN: KG
PROJECT NO. 2006003
SHEET NAME: **GENERAL INFORMATION PLAN**
SHEET NO. **C101**



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JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE 1/4, S10, T12N, R4E

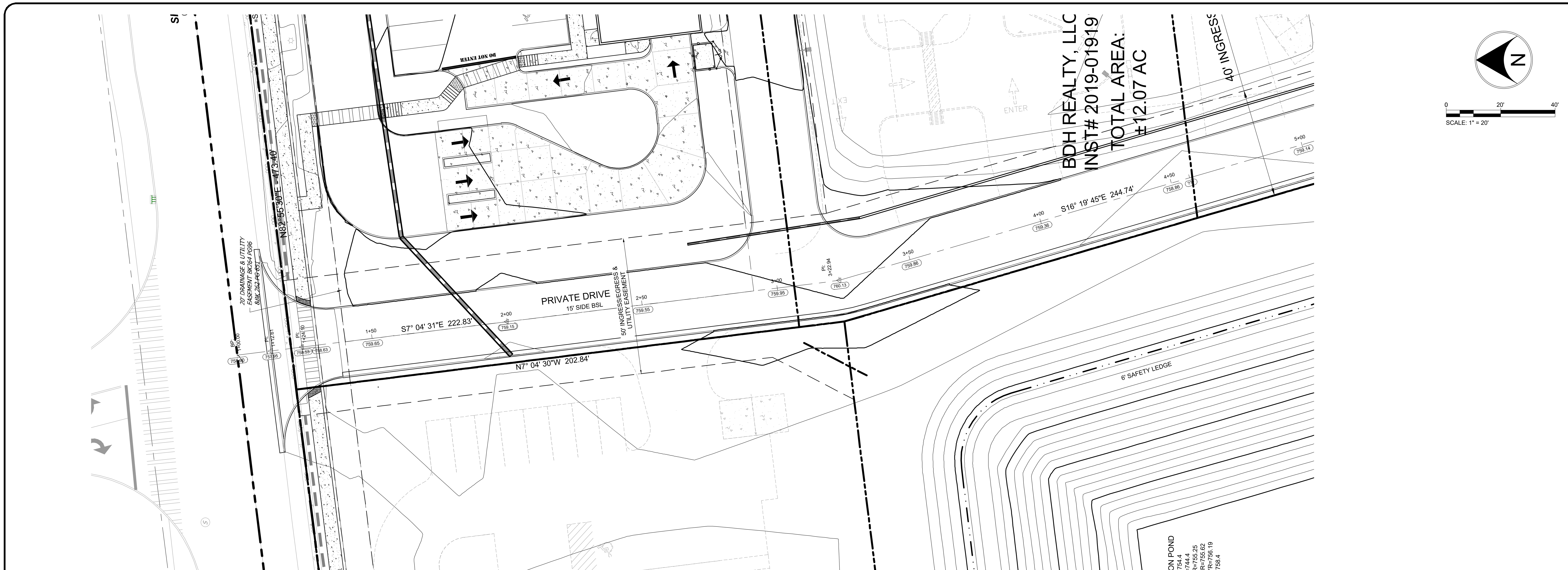
CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

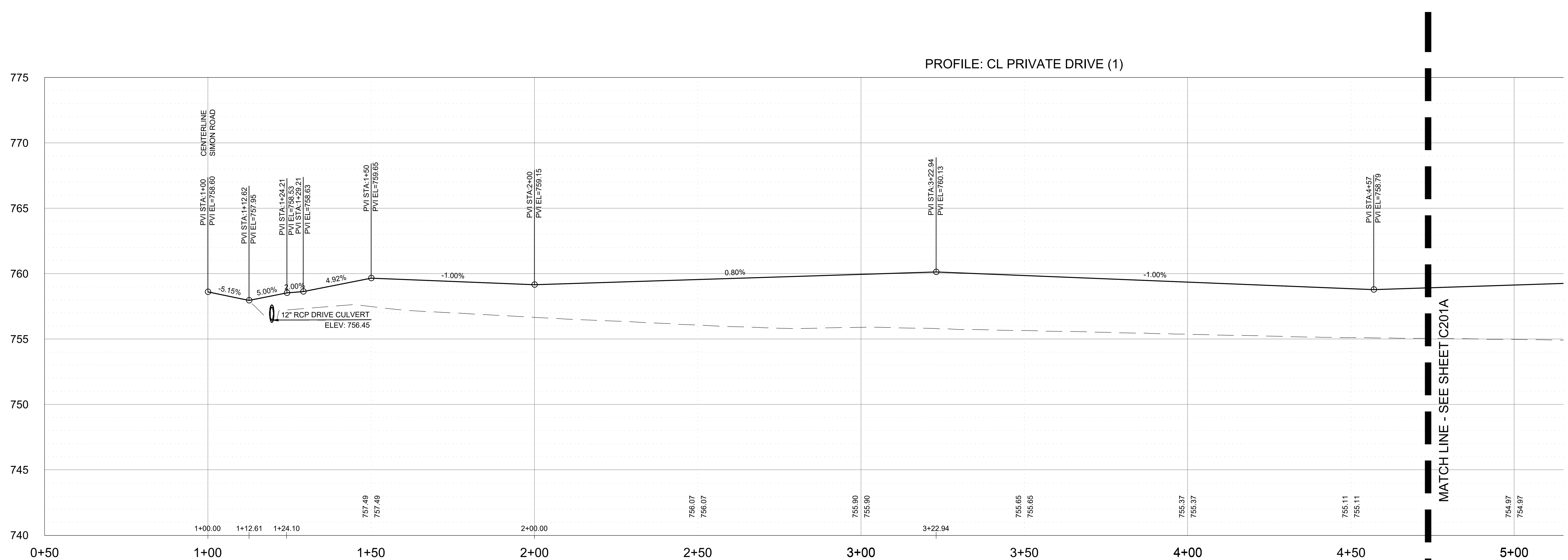
PLAN DATE:		
3/26/2021		
DESIGN: AF	CHECK: AF	DRAWN: KG

PROJECT NO.
2006003

SHEET NAME
OVERALL SITE LAYOUT PLAN

SHEET NO.
C200





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FRANKLIN, INDIANA 46131
JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE 1/4, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

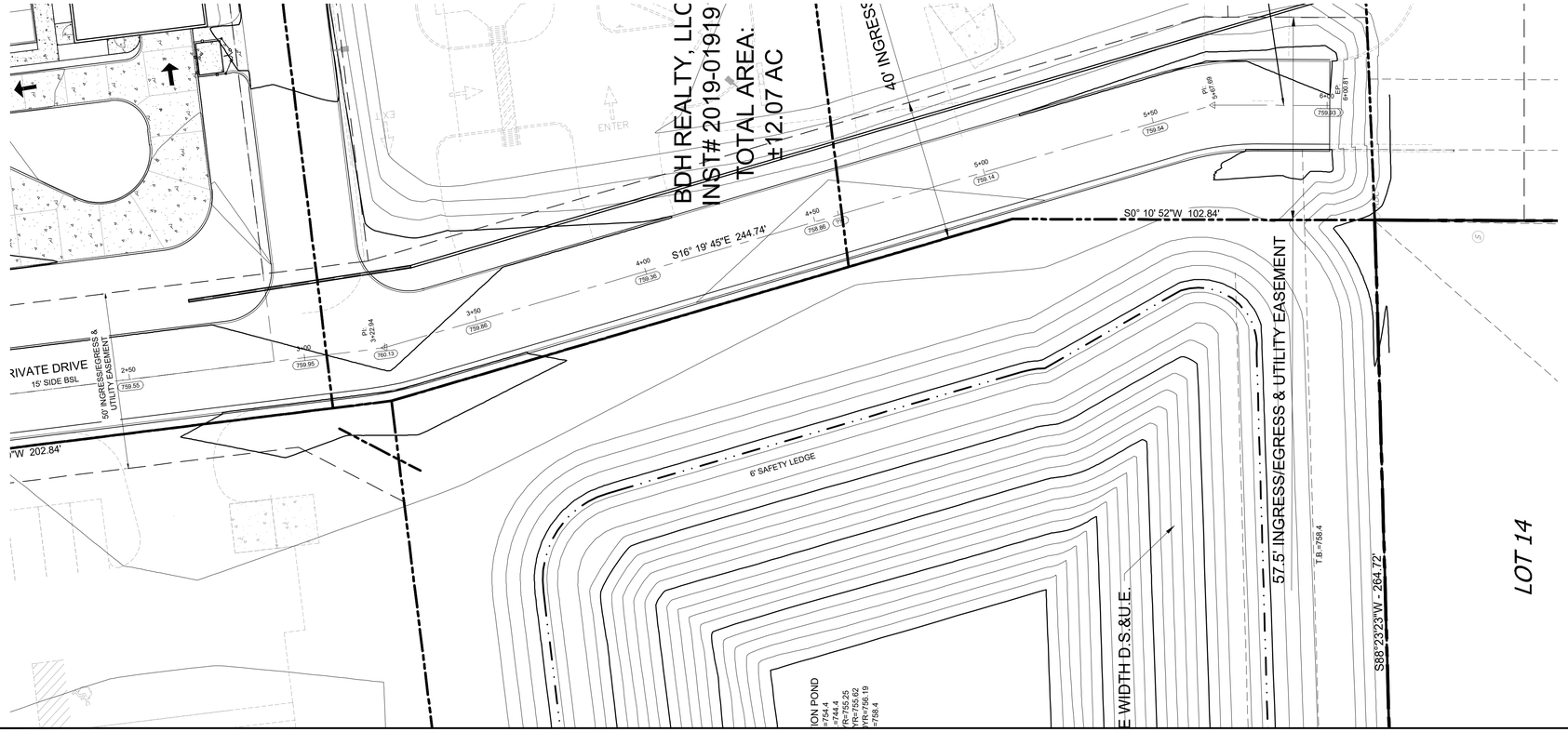
PLAN DATE: 3/26/2021

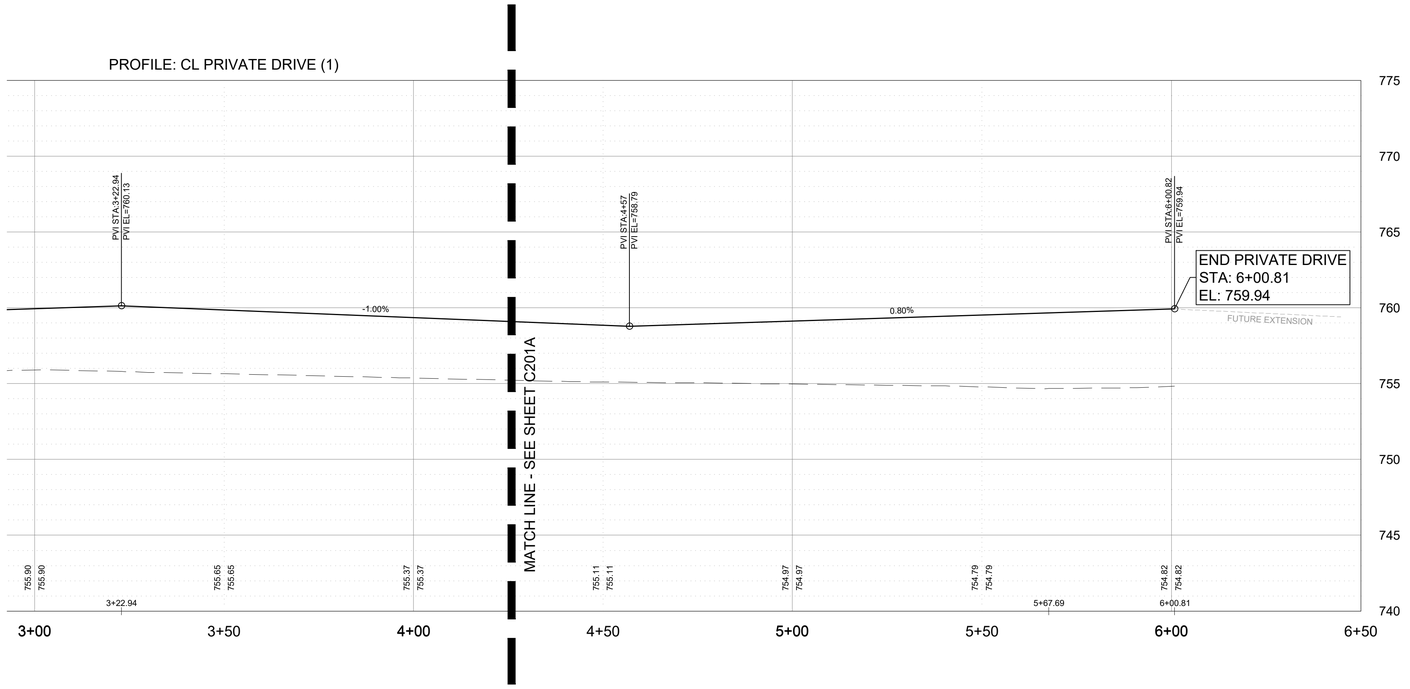
DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
PRIVATE DRIVE PLAN & PROFILE

SHEET NO.
C201





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STATE OF INDIANA
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8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
PRIVATE DRIVE PLAN & PROFILE

SHEET NO.
C201A

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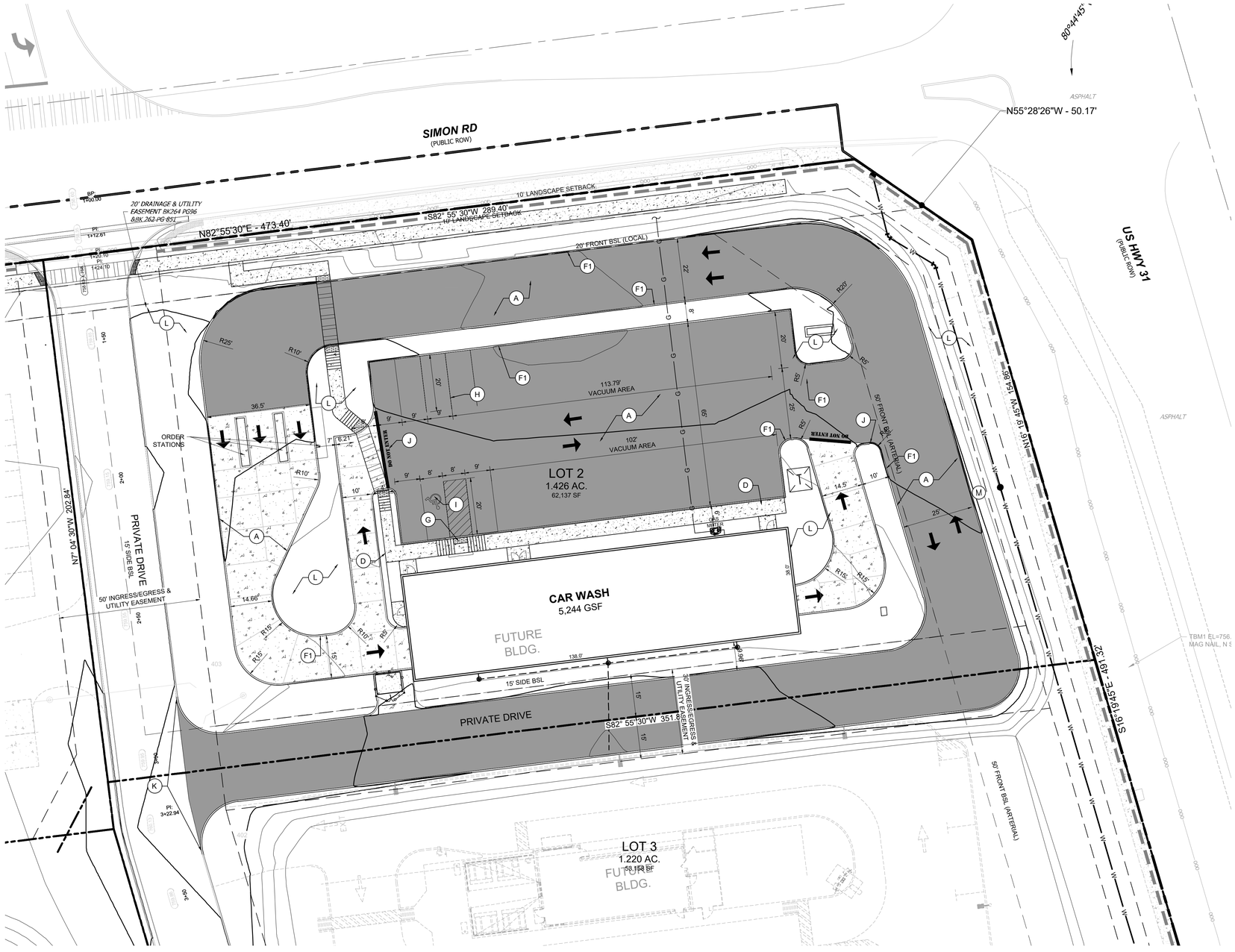

N

0 20' 40'

SCALE: 1" = 20'

KEY NOTES: (XX)

A	LIGHT DUTY ASPHALT PAVEMENT	
B	HEAVY DUTY ASPHALT PAVEMENT	
C	CONCRETE PAVEMENT	
D	COMBINED CONCRETE CURB & WALK	
E	CONCRETE WALK	
F1	6" CONCRETE CURB	
F2	VALLEY CURB & GUTTER	
F3	CHAIRBACK CURB & GUTTER	
F4	6" CONCRETE CURB WITH CONCRETE ISLAND	
G	ADA RAMP (PER INDOT DETAIL)	
H	4" WHITE PAVEMENT STRIPING, TYP.	
I	ADA BLUE PAVEMENT STRIPING, TYP.	
J	PAVEMENT MARKING (AS SHOWN)	
K	MATCH EXISTING PAVEMENT, CURB, OR WALK	
L	LANDSCAPE AREA	
M	DUMPSTER ENCLOSURE (REF. ARCH. PLAN)	
N	EXISTING SIDEWALK/PAVEMENT TO REMAIN	
O	SIDEWALK TRANSITION AT DRIVE (PER INDOT DETAIL)	
P	BICYCLE PARKING (U-SHAPED, BLACK THERMOPLASTIC POWDER COATED)	
Q	FLUSH CURB / CURB TAPER	
R	MONUMENT SIGN (REF. SIGNAGE PLANS)	
S	CONCRETE WHEEL BLOCK	

NOTES:

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STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

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8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
CAR WASH SITE PLAN

SHEET NO.
C202

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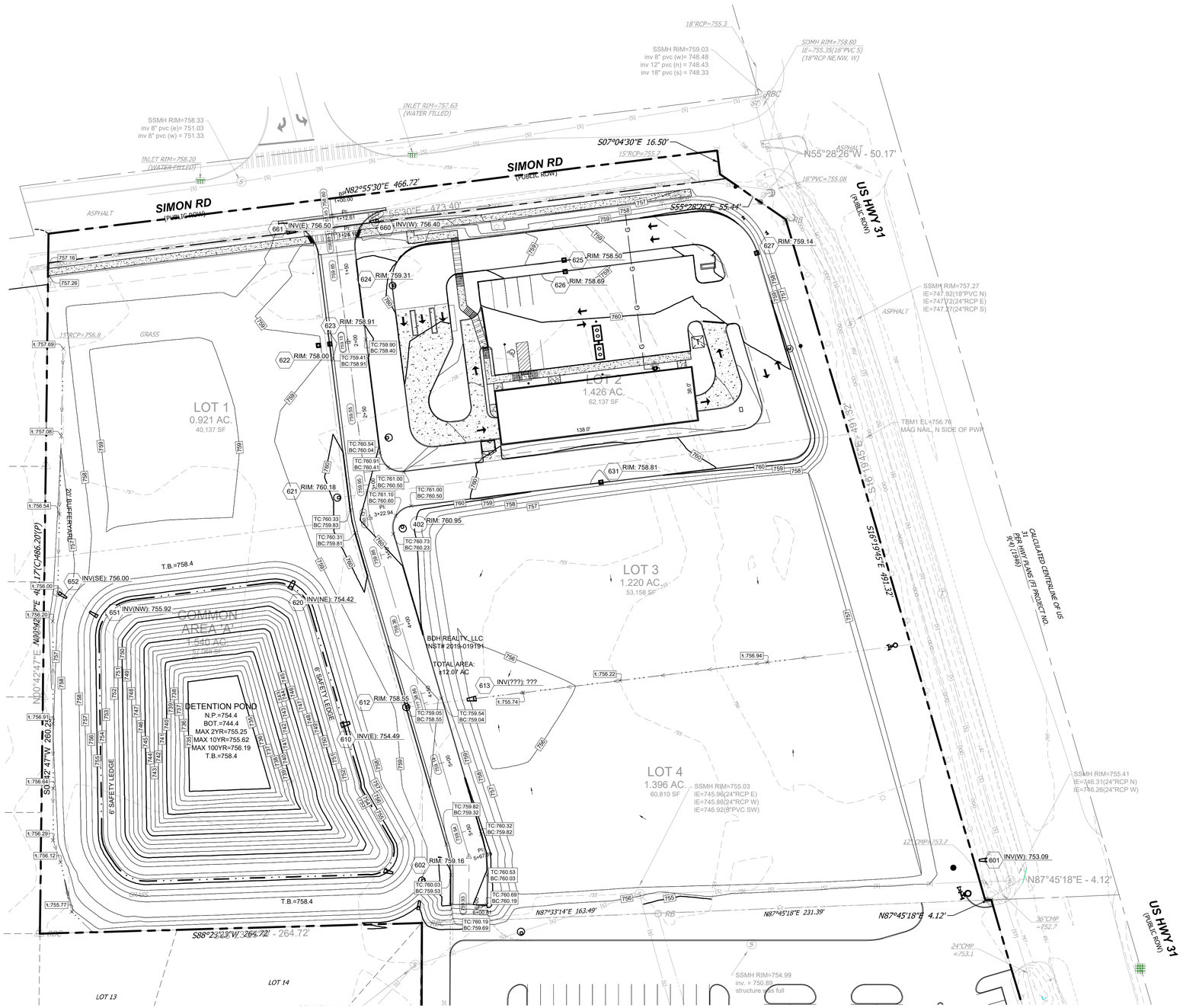

N

0 40' 80'

SCALE: 1" = 40'

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ASHTON J. FRITZ
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JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

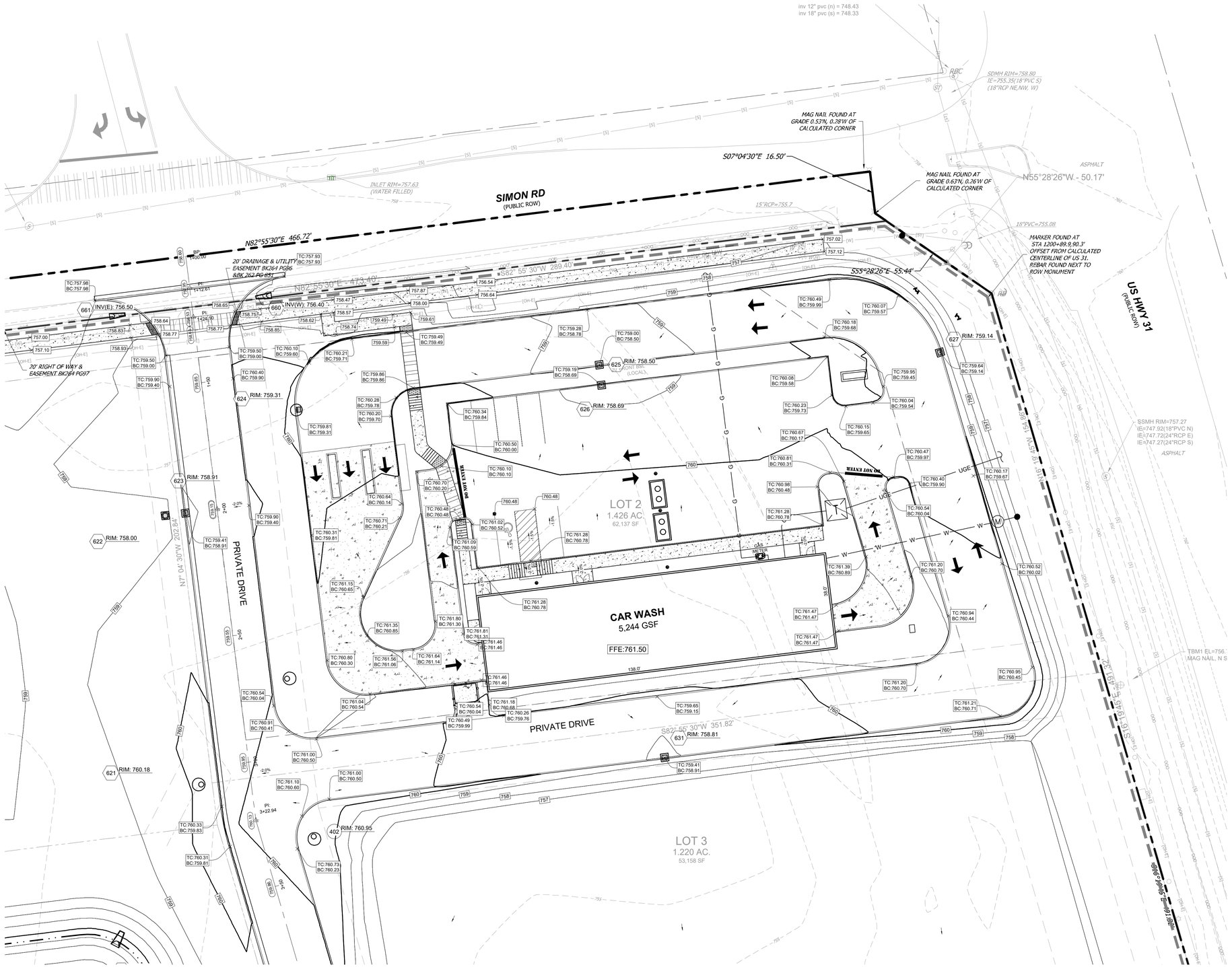
PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
OVERALL GRADING PLAN

SHEET NO.
C301



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REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

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PROJECT:
BDH REALTY CAR WASH

PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

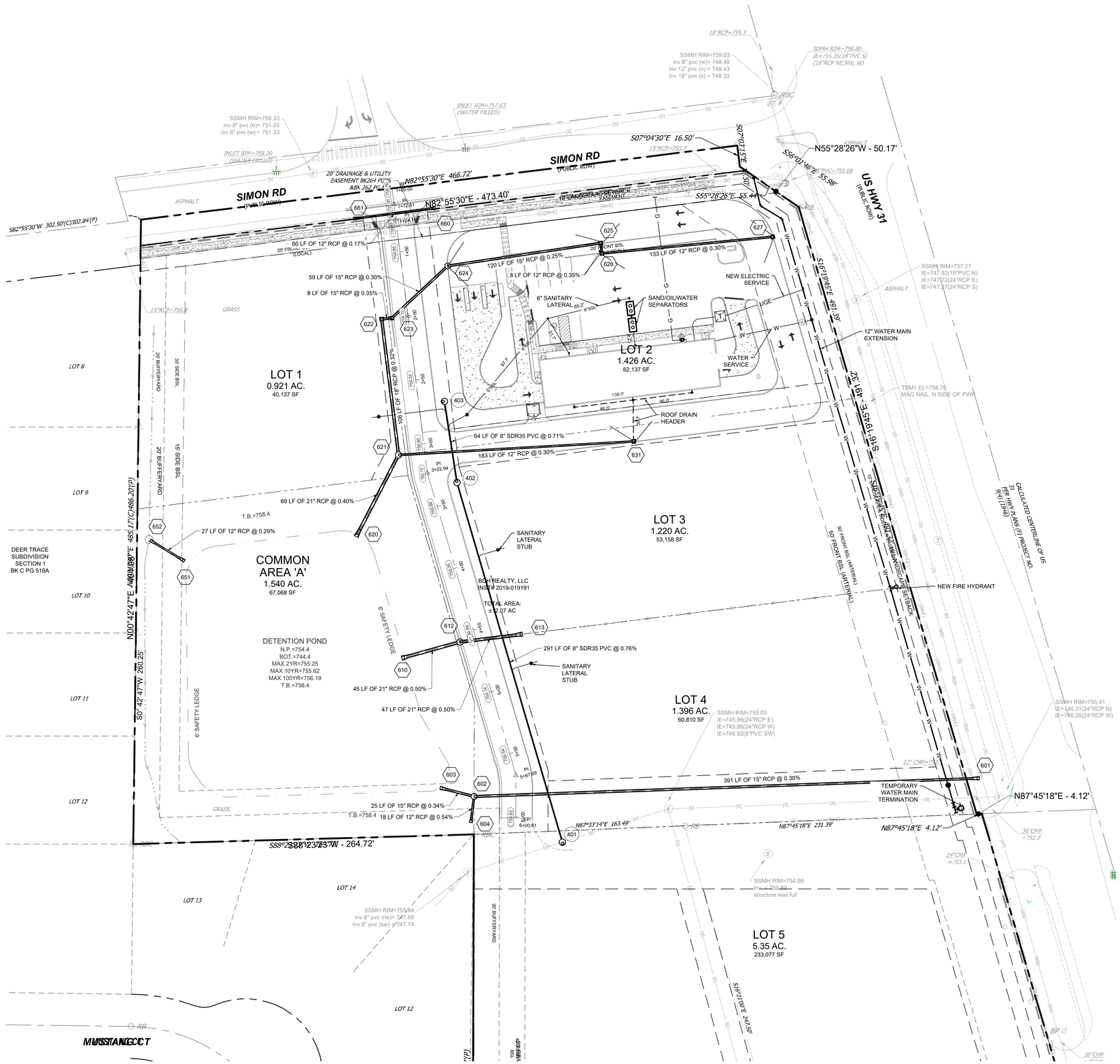
PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
JH	AF	KG

PROJECT NO. 2006003

SHEET NAME
CARWASH GRADING PLAN

SHEET NO.
C302



N

0 40' 80'

SCALE: 1" = 40'

KEY NOTES: (XX)

SANITARY - NEW SANITARY MANHOLE (4XX)

STORM - PR. STRUCTURE, REF. STORM STRUCTURE TABLE (6XX)

NOTES:
1. UTILITY CROSSINGS UNDER EX. PAVEMENT SHALL BE BORED OR JACK & BORED. OPEN CUTS SHALL BE AVOIDED.

2. ALL PROPOSED END SECTIONS SHALL HAVE ANIMAL GUARDS INSTALLED.

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GENERAL NOTES / LEGEND:

PROJECT:
BDH REALTY CAR WASH

PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
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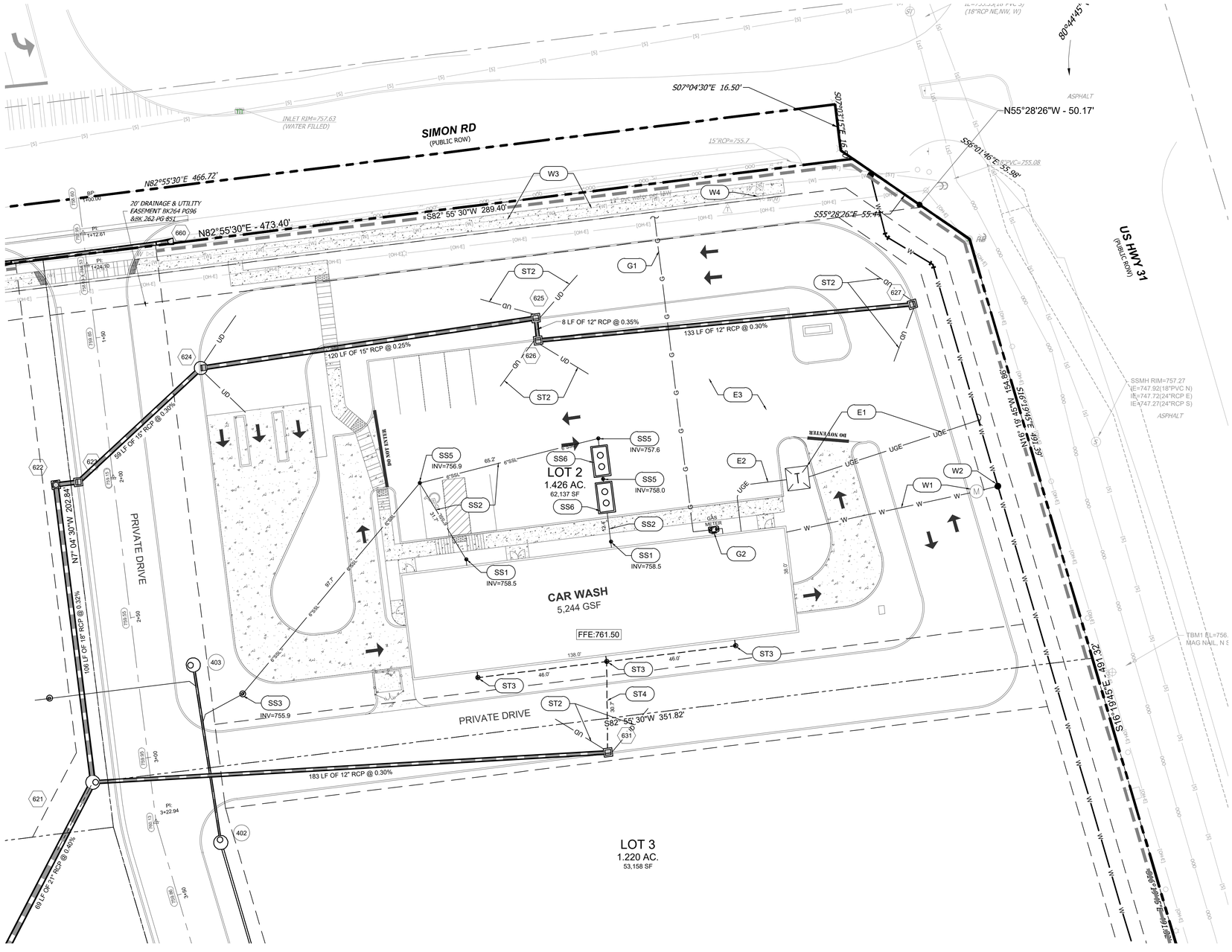
PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
OVERALL UTILITY PLAN

SHEET NO.
C400



N

0 20' 40'

SCALE: 1" = 20'

KEY NOTES: (XX)

E1 ELECTRIC - NEW TRANSFORMER, COORD. NEW SERVICE LINE WITH MEP PLANS AND POWER COMPANY.

E2 ELECTRIC - SECONDARY CONDUIT, COORD. WITH MEP PLANS FOR SIZE AND CABLE REQUIRED.

E3 ELECTRIC - COORDINATE POWER DISTRIBUTION ONSITE WITH MEP/SITE ELECTRICAL PLAN.

G1 GAS SERVICE LINE, COORD. SIZE & LOCATION WITH MEP PLANS AND GAS CO.

G2 GAS METER, COORD WITH MEP PLANS & GAS CO.

SS1 SANITARY - BLDG. CLEANOUT PER FRANKLIN SANITARY DISTRICT, SEE PLAN FOR INVERTS

SS2 SANITARY - 6" SDR 26 PVC LATERAL @ 1.04% MIN.

SS3 SANITARY - CONNECT LATERAL TO SANITARY LATERAL STUB PER FRANKLIN SANITARY STANDARDS. CONTRACTOR SHALL COORDINATE LATERAL STUB LOCATION AND INVERT WITH SEWER MAIN PLAN ELEVATION PRIOR TO CONSTRUCTION.

SS4 SANITARY - NEW SANITARY MANHOLE (4XX)

SS5 SANITARY - CLEANOUT PER FRANKLIN SANITARY STANDARDS. SEE PLAN FOR INVERTS.

SS6 SANITARY - OIL WATER SEPARATOR, REF. DETAIL.

SS7 SANITARY - EXISTING SANITARY SEWER STRUCTURE/MAIN TO REMAIN. PROTECT THROUGHOUT CONSTRUCTION.

ST1 STORM - PR. STRUCTURE, REF. STORM STRUCTURE TABLE (6XX)

ST2 STORM - 20 LF 6" PERFORATED UNDERDRAIN AT 1% TOWARDS INLET

ST3 STORM - ROOFDRAIN CLEANOUT. REF. MEP PLANS FOR EXACT SIZE AND LOCATION OF ROOF DRAIN PIPING WITHIN 5' OF THE BUILDING.

ST4 STORM - 10" HDPE N12 ROOF DRAIN PIPE AT 1.0%. SEE PLAN FOR LENGTH. CONNECT TO DOWNSTREAM DRAINAGE STRUCTURE AS ILLUSTRATED.

ST5

ST6

W1 WATER - PR. 3" DOMESTIC SERVICE VALVE, METER VAULT WITH DUAL 2" METERS PER INDIANA AMERICAN WATER STANDARDS. COORDINATE SIZE/LOCATION WITH MEP PLANS.

W2 WATER - PR. DOMESTIC SERVICE TAP ON NEW WATER MAIN.

W3 WATER - EX. WATER MAIN TO REMAIN. PROTECT THROUGHOUT CONSTRUCITON.

W4 WATER - EX. FIRE HYDRANT TO REMAIN. PROTECT THROUGHOUT CONSTRUCTION.

W5

W6

UX UTILITY CROSSING, APPROX. LOCATION SHOWN. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF ALL EX. UTILITIES WITHIN AREA OF WORK PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED OF ANY POTENTIAL CONFLICTS FOUND.

NOTES:
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JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

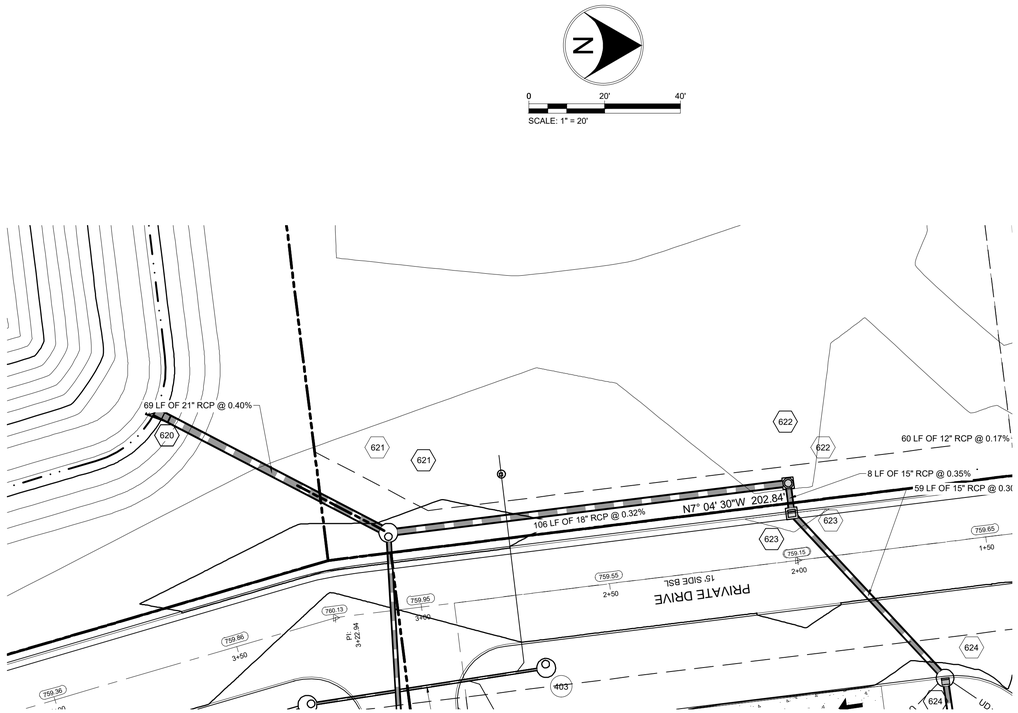
PLAN DATE: 3/26/2021

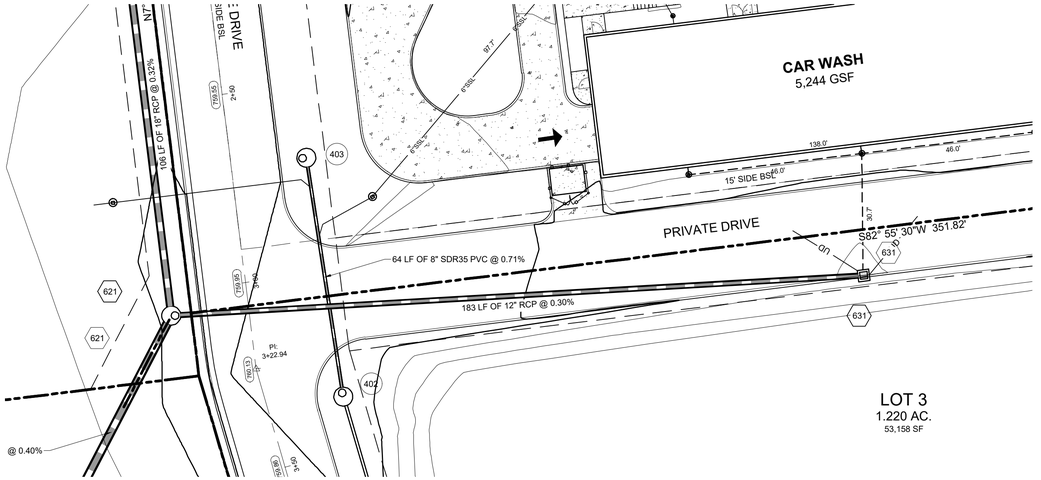
DESIGN:	CHECK:	DRAWN:
AF	AF	KG

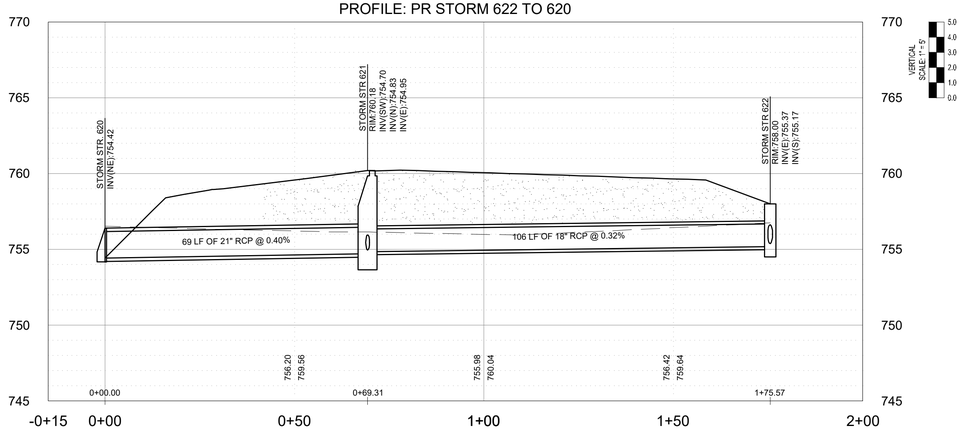
PROJECT NO. 2006003

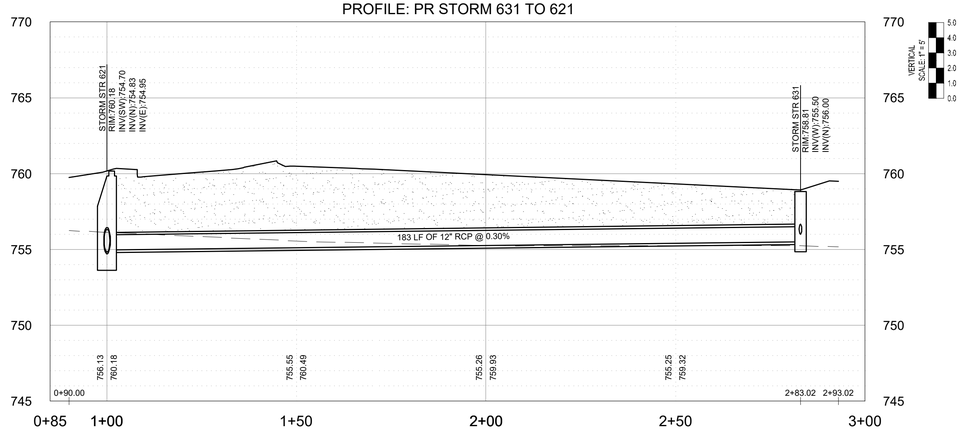
SHEET NAME
CAR WASH UTILITY PLAN

SHEET NO.
C401









LEGEND:

FINISHED GRADE

EXISTING GRADE

GRANULAR BACKFILL

STORM STRUCTURE ID (6XX)

N

0 20' 40'

SCALE: 1" = 20'

Z

0 20' 40'

SCALE: 1" = 20'

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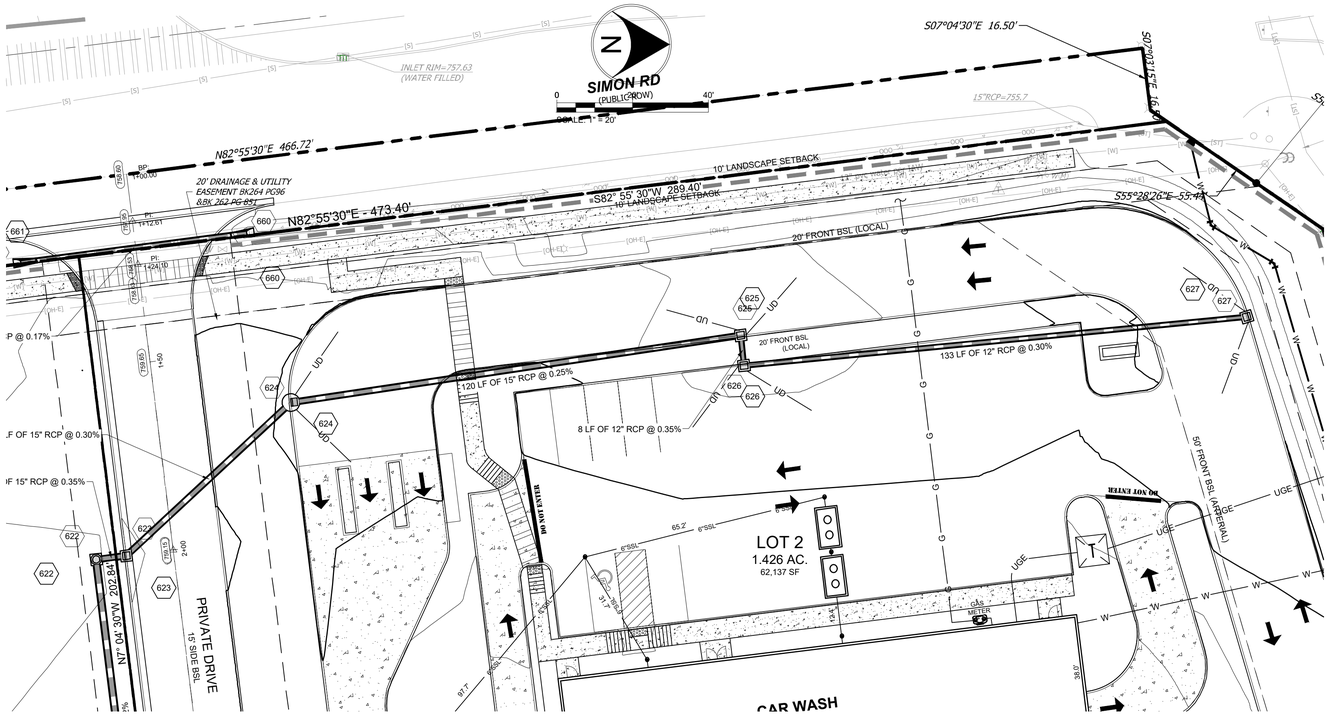
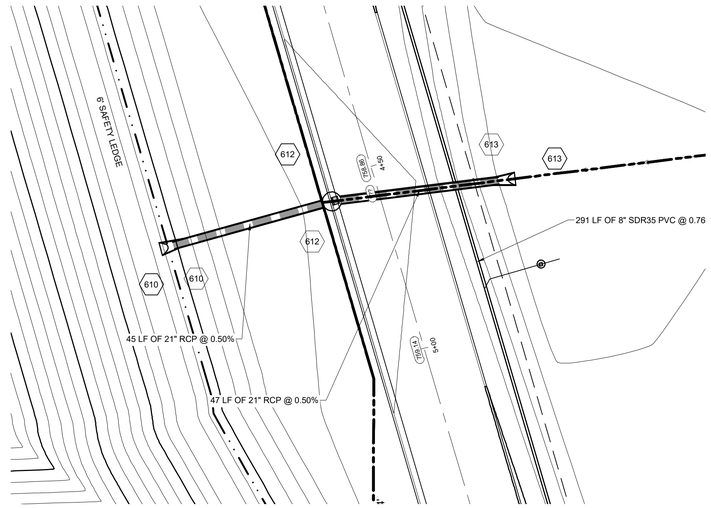
PROJECT NO. 2006003

SHEET NAME
STORM PLAN & PROFILE

SHEET NO.
C402



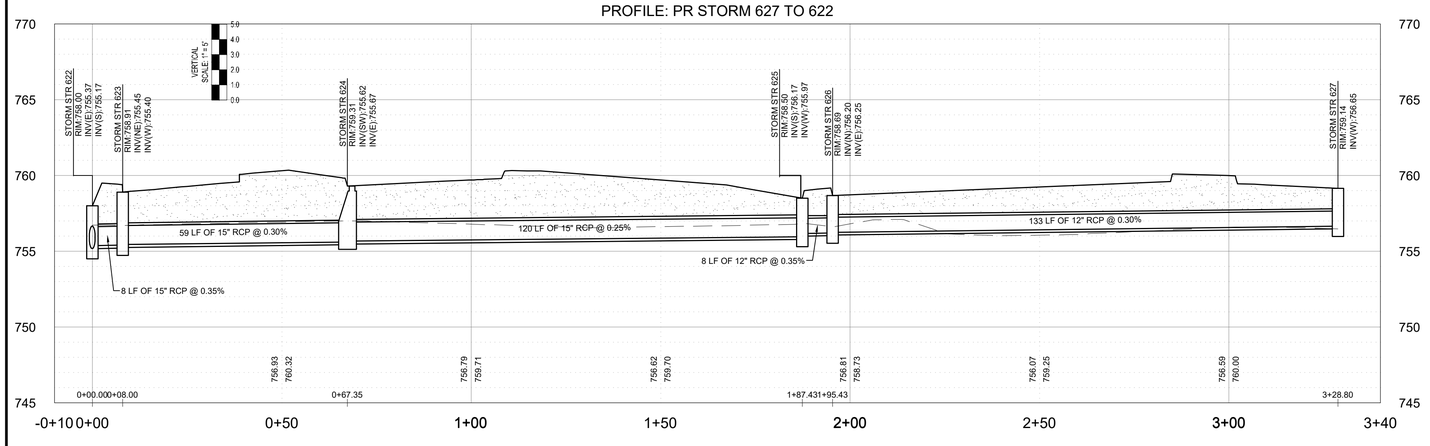


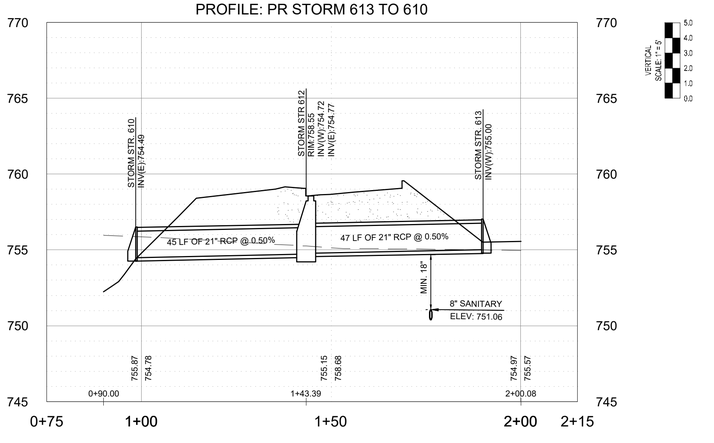
LEGEND:

- FINISHED GRADE
- EXISTING GRADE
- GRANULAR BACKFILL
- STORM STRUCTURE ID (6XX)

N

SCALE: 1" = 20'





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BDH REALTY CAR WASH
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2140 N MORTON ST.
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JOHNSON COUNTY
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CLIENT:
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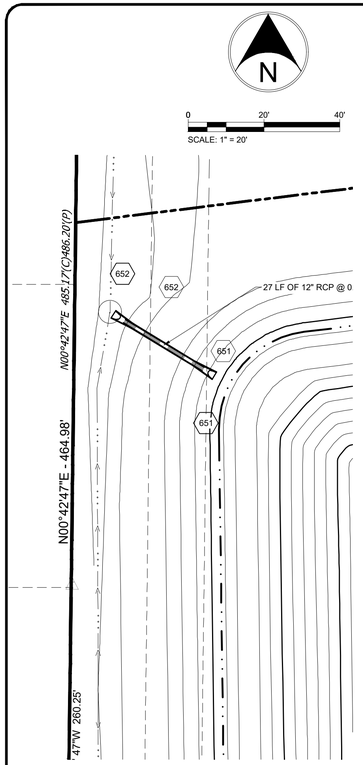
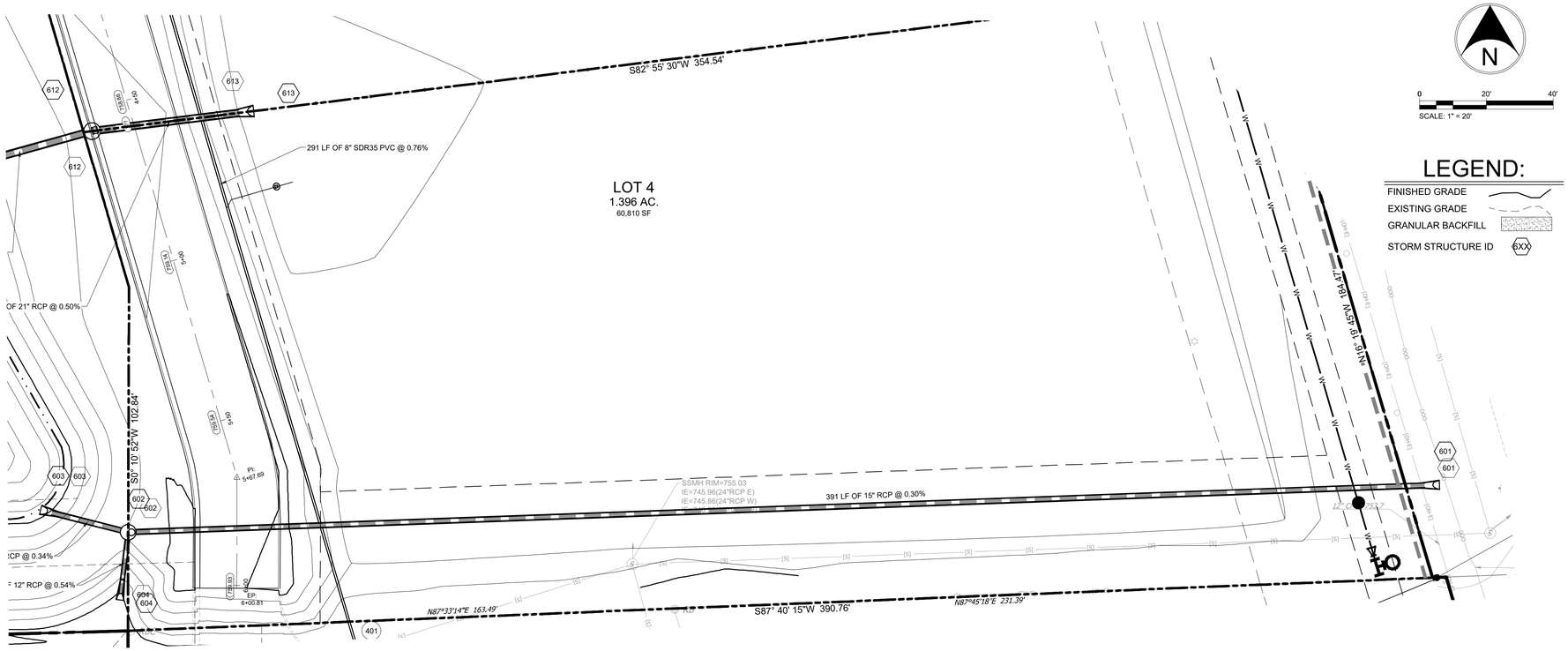
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

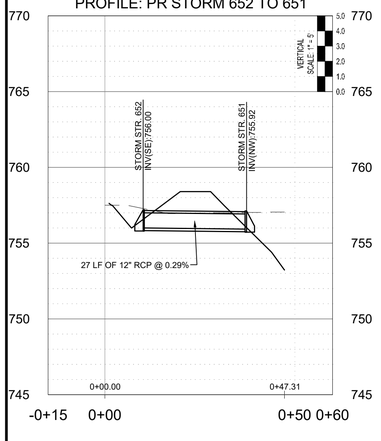
PROJECT NO. 2006003
SHEET NAME
STORM PLAN & PROFILE
SHEET NO.
C403

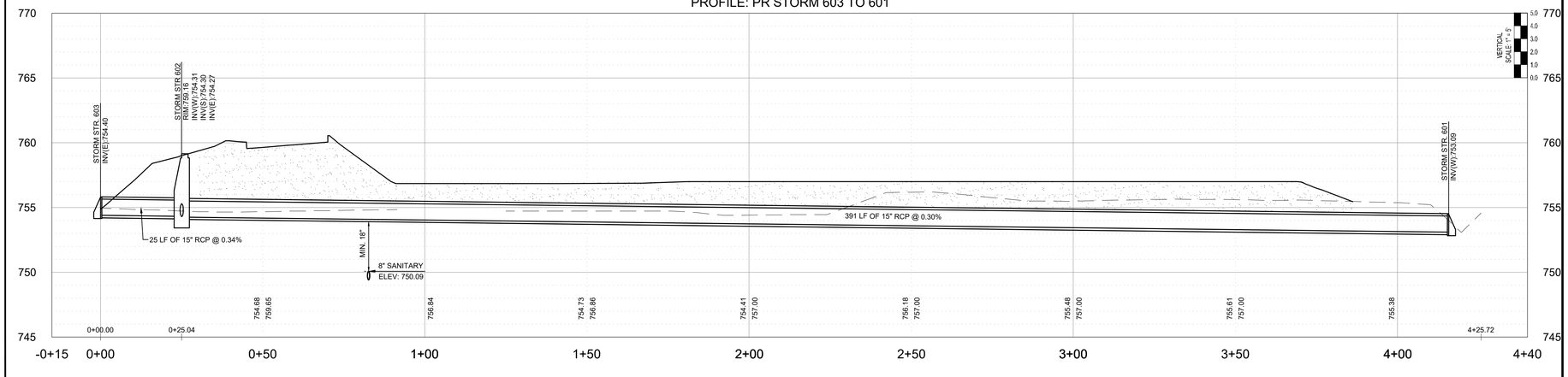




LEGEND:

- FINISHED GRADE
- EXISTING GRADE
- GRANULAR BACKFILL
- STORM STRUCTURE ID (6XX)





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STATE OF INDIANA
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JOHNSON COUNTY

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CLIENT:
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8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
STORM PLAN & PROFILE

SHEET NO.
C404

STORM STRUCTURE DATA TABLE

STRUCTURE I.D.	RIM ELEVATION	NEENAH CASTING DESIGNATION	INFLOW INV, SIZE, (DIR.), [UP STR.]	OUTFLOW INV, SIZE, (DIR.), [DOWN STR.]	DESCRIPTION & NOTES
601			INV:753.09 15" RCP (W)[602]		15 " End Section
602	759.16	R-1772	INV:754.31 15" RCP (W)[603] INV:754.30 12" RCP (S)[604]	INV:754.27 15" RCP (E)[601]	48" DIA. MH
603				INV:754.40 15" RCP (E)[602]	15 " End Section
604				INV:754.40 12" RCP (N)[602]	12 " End Section
610			INV:754.49 21" RCP (E)[612]		21 " End Section
612	758.55	R-3010	INV:754.77 21" RCP (E)[613]	INV:754.72 21" RCP (W)[610]	48" DIA. MH
613				INV:755.00 21" RCP (W)[612]	21 " End Section
620			INV:754.42 21" RCP (NE)[621]		21 " End Section
621	760.18	R-1772	INV:754.83 18" RCP (N)[622] INV:754.95 12" RCP (E)[631]	INV:754.70 21" RCP (SW)[620]	48" DIA. MH
622			INV:755.37 15" RCP (E)[623]	INV:755.17 18" RCP (S)[621]	2'x2' BOX
623			INV:755.45 15" RCP (NE)[624]	INV:755.40 15" RCP (W)[622]	2'x2' BOX
624	759.31	R-3010	INV:755.67 15" RCP (E)[625]	INV:755.62 15" RCP (SW)[623]	48" DIA. MH
625	758.50	R-3286-8V	INV:756.17 12" RCP (S)[626]	INV:755.97 15" RCP (W)[624]	2'x2' BOX
626	758.69	R-3286-8V	INV:756.25 12" RCP (E)[627]	INV:756.20 12" RCP (N)[625]	2'x2' BOX
627	759.14	R-3286-8V		INV:756.65 12" RCP (W)[626]	2'x2' BOX
631	758.81	R-3286-8V	INV:756.00 8" HDPE (N)[]	INV:755.50 12" RCP (W)[621]	2'x2' BOX
651			INV:755.92 12" RCP (NW)[652]		12 " End Section
652				INV:756.00 12" RCP (SE)[651]	12 " End Section
660			INV:756.40 12" RCP (W)[661]		12 " End Section
661				INV:756.50 12" RCP (E)[660]	12 " End Section

STORM SEWER PIPE DATA TABLE

UPSTREAM STRUCTURE I.D.	DOWNSTREAM STRUCTURE I.D.	LENGTH OF PIPE	PIPE SIZE / TYPE	SLOPE %	UPSTREAM PIPE INV.	DOWNSTREAM PIPE INV.
661	660	60 LF	12" RCP	0.17%	756.50	756.40
652	651	27 LF	12" RCP	0.29%	756.00	755.92
631	621	183 LF	12" RCP	0.30%	755.50	754.95
627	626	133 LF	12" RCP	0.30%	756.65	756.25
626	625	8 LF	12" RCP	0.35%	756.20	756.17
625	624	120 LF	15" RCP	0.25%	755.97	755.67
624	623	59 LF	15" RCP	0.30%	755.62	755.45
623	622	8 LF	15" RCP	0.35%	755.40	755.37
622	621	106 LF	18" RCP	0.32%	755.17	754.83
621	620	69 LF	21" RCP	0.40%	754.70	754.42
613	612	47 LF	21" RCP	0.50%	755.00	754.77
612	610	45 LF	21" RCP	0.50%	754.72	754.49
603	602	25 LF	15" RCP	0.34%	754.40	754.31
602	604	18 LF	12" RCP	0.54%	754.30	754.40
602	601	391 LF	15" RCP	0.30%	754.27	753.09

N

0 40' 80'

SCALE: 1" = 40'

LEGEND:

FINISHED GRADE

EXISTING GRADE

GRANULAR BACKFILL

STORM STRUCTURE ID 6XX

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DESIGN:	CHECK:	DRAWN:
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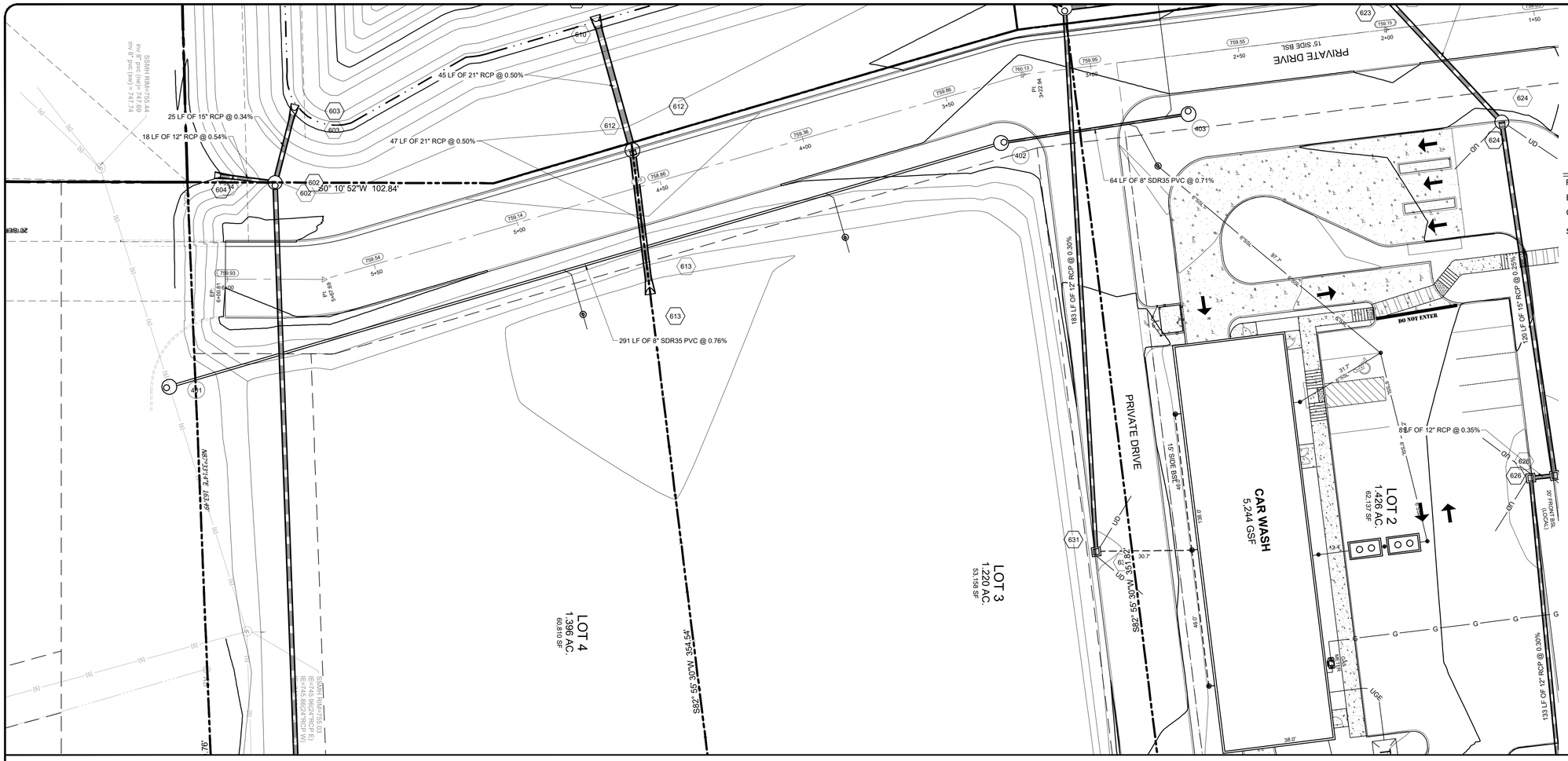
PROJECT NO. 2006003

SHEET NAME
STORM DATA TABLES

SHEET NO.
C405



N

0 40' 80'

SCALE: 1" = 40'

LEGEND:

FINISHED GRADE	⁄
EXISTING GRADE	- - -
GRANULAR BACKFILL	▨
STORM STRUCTURE ID	6XX

PROFILE: PR SANITARY 403 TO 401

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JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE $\frac{1}{4}$, S10, T12N, R4E

CLIENT:
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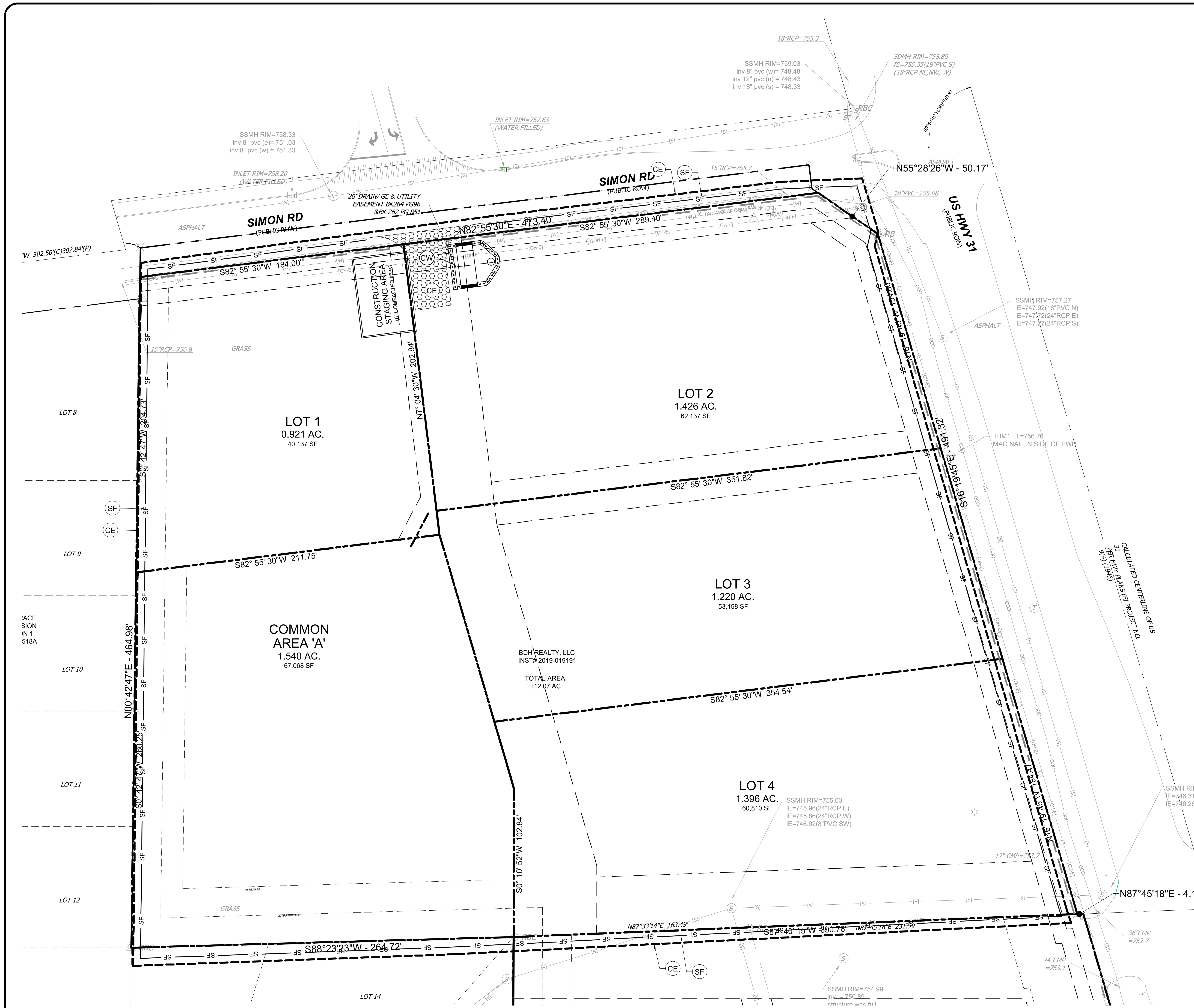
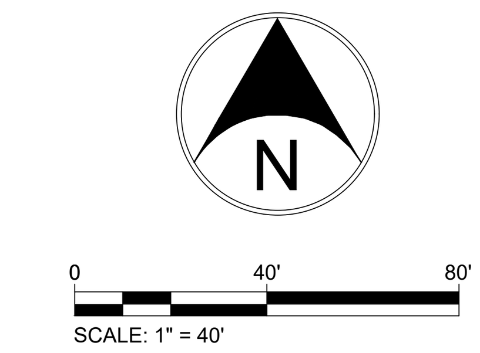
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021		
DESIGN: AF	CHECK: AF	DRAWN: KG
PROJECT NO. 2006003		
SHEET NAME **SANITARY PLAN & PROFILE**		
SHEET NO. **C406**		





KEY NOTES:

IP	DROP INLET PROTECTION	
CE	CONSTRUCTION ENTRANCE	
PS	PERMANENT SEEDING	
TS	TEMPORARY SEEDING	
EB	EROSION CONTROL BLANKET WITH PERMANENT SEEDING	
SS	SOIL STOCKPILE	
SF	SILT FENCE	SF
CL	CONSTRUCTION LIMITS	
CW	CONCRETE WASHOUT	
SUB	ASPHALT PAVEMENT SUBBASE	

EROSION CONTROL SEQUENCE

1. Contractor shall schedule a Pre-Construction Meeting with the CITY OF FRANKLIN Stormwater Management Dept.) 317-873-4544
2. The following erosion control measures shall be in place prior to any land disturbing activities:
   - 2.1. Create a stabilized construction entrance
   - 2.2. Install Temporary Inlet Protection Measures on existing storm inlets.
   - 2.3. Install Temporary Silt Fence and/or Silt Sock Protection as shown on approved plans
   - 2.4. Install Temporary Concrete Washout
3. Contractor shall contact the CITY OF FRANKLIN for an initial Erosion Control Inspection to obtain full sign off on the Improvement Location Permit prior to earthwork activities.
4. Once land disturbing activities begin, the following practices shall be provided:
   - 4.1. The Trained Individual shall make weekly site inspections and after every rainfall event of 0.5 inches and greater.
   - 4.2. Positive drainage shall be maintained at all times. Contractor shall ensure the downstream drainage system and adjacent properties are not receiving sediment/debris laden runoff. If additional measures are necessary to protect adjacent properties or the downstream drainage system, the Contractor shall notify the Engineer and implement the necessary measures immediately.
   - 4.3. Once earth disturbing activities begin, the adjacent roadways, adjacent drives and parking lots shall be continuously monitored for sediment tracking. If sediment is found, immediate action is required to clean the offsite areas and the current erosion control practices will need to be inspected and modified accordingly to prevent any further sediment from leaving the project site.
   - 4.4. Once the new storm structures/pipes are is in place, the appropriate type of inlet protection measures shall be placed.
   - 4.5. Continued monitoring of all exposed areas shall be performed in order to verify the surrounding areas are not becoming sediment laden from construction activities onsite.
   - 4.6. As the construction occurs, disturbed areas shall be stabilized as soon as they are at finished grade or will be left bare for more than 15 days.
   - 4.7. Provide final grade stabilization upon final grading of all areas including erosion control blanketing, seeding and sodding as appropriate.
   - 4.8. Storm sewers that become silted due to construction activities shall be cleaned with a jet vacuum and the material properly disposed of.
5. Construction Phase BMP's shall remain in place and continue to be inspected until the entire site has reached the minimum vegetative cover, 70% established.
6. Upon the site reaching the required minimum established vegetative cover, the IDEM Rule 5 Notice of Termination shall be submitted to the MS4 Department for approval prior to submitting it to IDEM.

EROSION CONTROL NOTES:

1. All proposed erosion and sediment control shall be in conformance with CITY OF FRANKLIN Standards. Discrepancies between the plans and the Manual shall not alleviate the contractor from adhering to the requirements as set forth in the Manual.
2. All erosion control practices shall be in accordance with the "Indiana Storm Water Quality Manual" and the SCS "Field Office Technical Guide".
3. The CITY STORMWATER DEPARTMENT has the right to require additional erosion control measures in the field as conditions warrant.
4. Additional erosion and sediment control measures may be required by the inspector.
5. The storm water quality unit shown on these plans shall be the unit installed during the development of this property. No substitutions shall be permitted.
6. Copies of the letter of intent and response from CITY OF FRANKLIN office for Rule 5 compliance, when required.
7. There shall be no dirt, debris, or storage of materials in the street.
8. All erosion control materials shall be approved by CITY OF FRANKLIN prior to installation.
9. No soil will be removed or disposed of from the grading site.

TOTAL SITE AREA = 6.50 ACRES
DISTURBED AREA = 6.0 ACRES

THE CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION AND MAINTENANCE OF EROSION CONTROL AND STORM WATER POLLUTION PREVENTION FOR THE PROJECT AREA:

Name: BDH REALTY c/o JOHN HAINES
Address: 8220 SOUTH US 31
Phone: 317-716-6636
Email: jhaines@drivehubler.com

List of Qualifications:
Contractor is to inform CITY OF FRANKLIN of whom this stormwater pollution prevention individual is at the pre-construcion meeting, prior to any earth disturbing & construcion activities.

THE INDIANA STORM WATER QUALITY MANUAL & CITY OF FRANKLIN STANDARDS SHALL BE USED IN CONJUNCTION WITH THIS SET OF EROSION CONTROL PLANS.

EROSION CONTROL SCHEDULE

EROSION CONTROL MEASURE	*MAINTENANCE	INSTALLATION SEQUENCE
STONE ENTRANCE	AS NEEDED	PRIOR TO CLEARING AND GRADING
SILT FENCE	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING
EXISTING INLET PROTECTION	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING
TREE PROTECTION	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	PRIOR TO CLEARING AND GRADING
TEMPORARY DIVERSIONS	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	ALONG WITH ROUGH GRADING
TEMPORARY SEEDING	WATER AS NEEDED	AFTER ROUGH GRADING
PERMANENT SEEDING	WATER AS NEEDED	AFTER FINISH GRADING
EROSION CONTROL MATTING	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	AFTER FINISH GRADING
STRAW BALES	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	AFTER FINISH GRADING
INLET PROTECTION	WEEKLY, AFTER STORM EVENTS AND AS NEEDED	AFTER EACH INLET IS PLACED
SEED, SOD & LANDSCAPE AROUND UNITS FINISHED	WATER AS NEEDED	AFTER FINISHED GRADING AROUND FINISHED UNITS
REMOVAL OF STRAW BALES	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED
REMOVAL OF INLET PROTECTION	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED
REMOVAL OF SILT FENCE	N/A	AFTER ALL AREAS DRAINING TO THESE AREAS ARE STABILIZED

*- SEE CHART FOR MAINTENANCE REQUIREMENTS

Fritz Engineering Services, LLC
14020 Mississinewa Drive
Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

"IT'S THE LAW"
811
Know what's below. Call before you dig.
2 WORKING DAYS BEFORE YOU DIG.

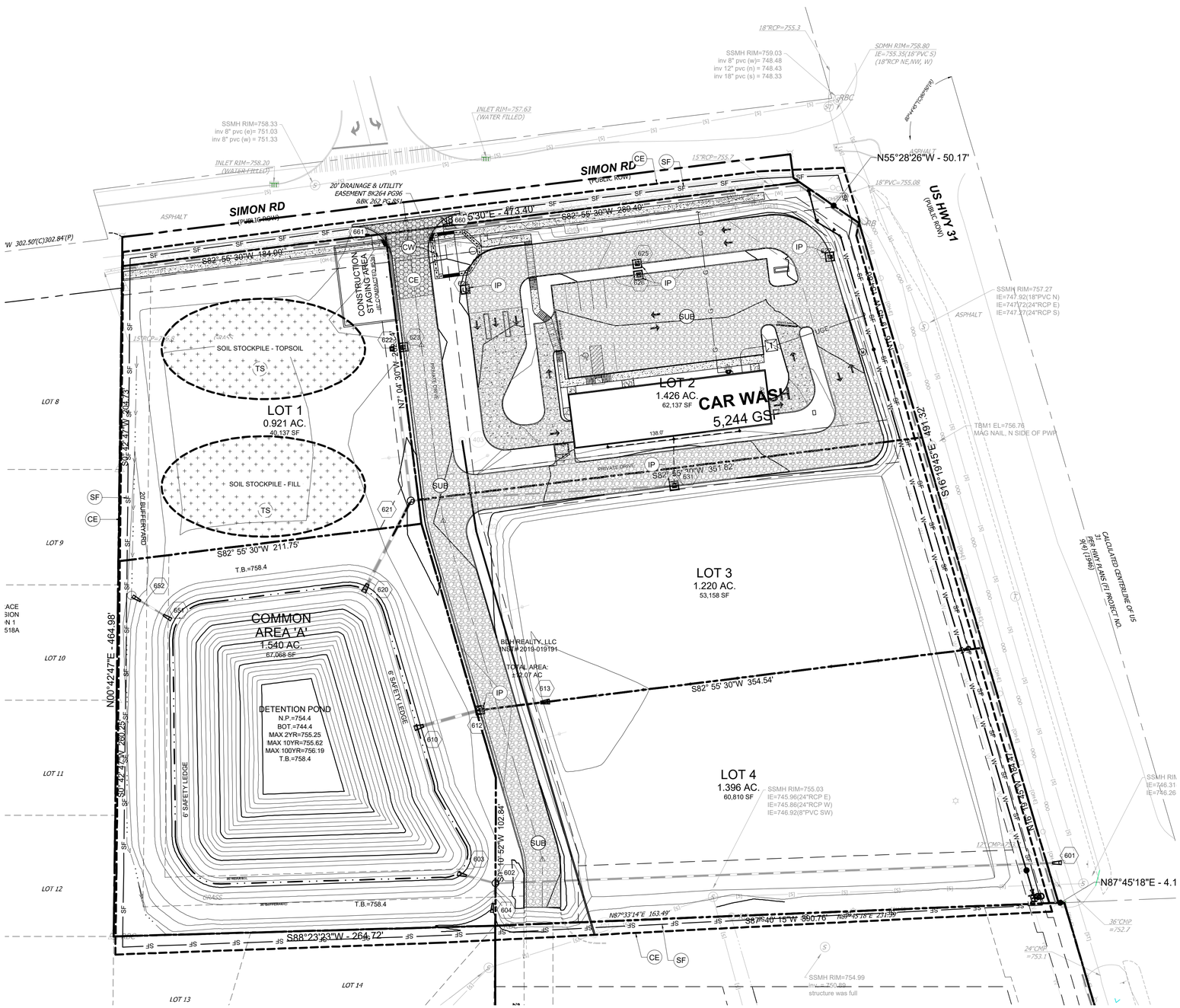
PROJECT:
BDH REALTY CAR WASH

PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021
DESIGN: AF CHECK: AF DRAWN: KG
PROJECT NO. 2006003
SHEET NAME
EROSION CONTROL & SWPPP
SHEET NO.
C501



KEY NOTES: (XX)

IP	DROP INLET PROTECTION	
CE	CONSTRUCTION ENTRANCE	
PS	PERMANENT SEEDING	
TS	TEMPORARY SEEDING	
EB	EROSION CONTROL BLANKET WITH PERMANENT SEEDING	
SS	SOIL STOCKPILE	
SF	SILT FENCE	SF
CL	CONSTRUCTION LIMITS	
CW	CONCRETE WASHOUT	
SUB	ASPHALT PAVEMENT SUBBASE	

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STATE OF INDIANA
PRELIMINARY NOT FOR CONSTRUCTION
PROFESSIONAL ENGINEER

REVISIONS AND ISSUES	DATE	BY

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SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

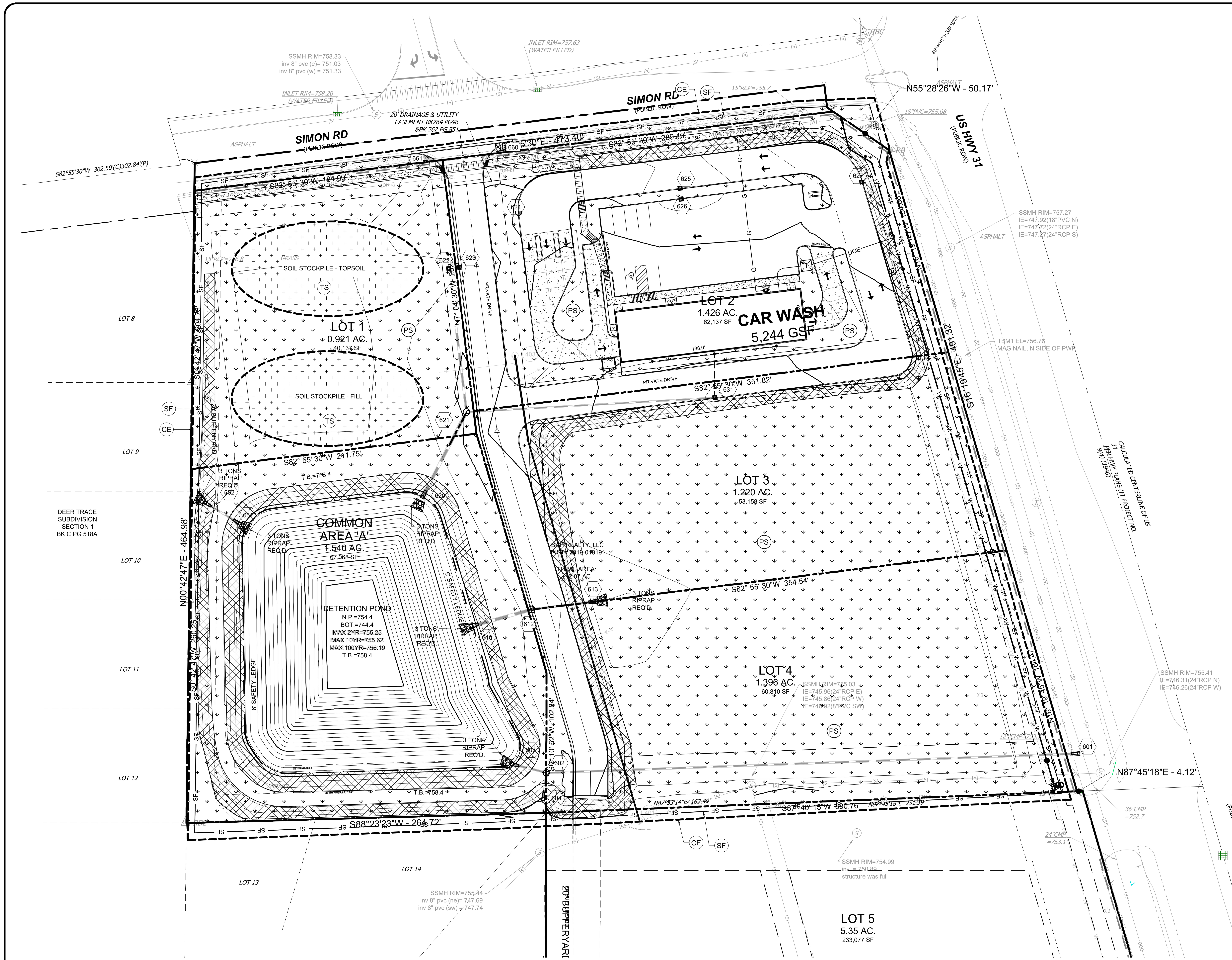
PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
EROSION CONTROL DETAILS

SHEET NO.
C502



N

0 40' 80'
SCALE: 1" = 40'

KEY NOTES:

IP	DROP INLET PROTECTION	
CE	CONSTRUCTION ENTRANCE	
PS	PERMANENT SEEDING	
TS	TEMPORARY SEEDING	
EB	EROSION CONTROL BLANKET WITH PERMANENT SEEDING	
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REVISIONS AND ISSUES	DATE	BY

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FRANKLIN, INDIANA 46131
JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE 1/4, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

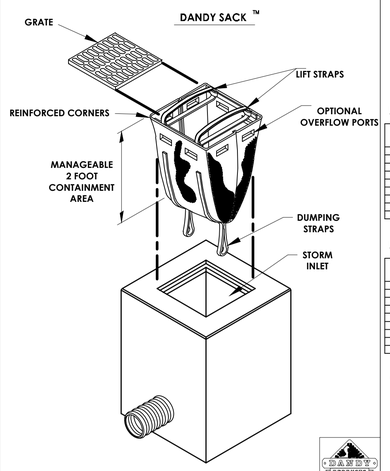
PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
POST CONSTRUCTION SWPPP

SHEET NO.
C503



DETAIL OF INLET SEDIMENT CONTROL DEVICE

DANDY SACK™ SPECIFICATIONS

NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2,824 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m (gal/min/ft²)	2852 (70)
Permittivity	ASTM D 4491	Sec-1	0.90

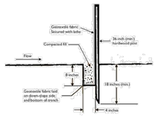
HI-FLOW DANDY SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.42 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.53 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m (gal/min/ft²)	2857 (145)
Permittivity	ASTM D 4491	Sec-1	2.1

*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

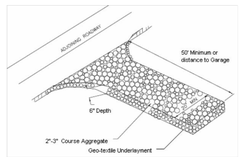
PROJECT:		DR. BY:
CITY/STATE:	DATE:	DR. NO:

BMP DETAILS



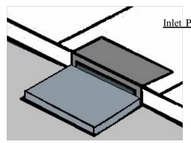
Silt Fence

1. Install silt fence parallel to the contour of the land.
2. Extend ends of silt fence upslope 3-4 feet to allow for ponding areas behind the fence.
3. Excavate trench 8 inches deep and 4 inches wide.
4. Install with stakes on the down slope side of fence.
5. Bury 12 inches of fabric in the trench, extending the bottom 4 inches toward the upslope side.
6. Backfill trench on both sides of fence and compact.
7. Join silt fence sections by wrapping two posts and driving them in together. Do not use any other method of joining.
8. Inspect weekly and within 24 hrs of a ½" of rain. Silt fence should be cleaned out when the sediment has reached 1/3 the height of the exposed fencing. Repair silt fence where torn or damaged. Complete repairs before the next anticipated rain and by no later than one week from the date they are noticed.



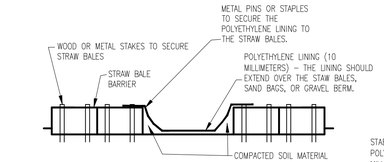
Construction Entrance

1. Install construction entrance from street to face of proposed building or at a 50' minimum length. Use #2 stone at a 6" minimum depth.
2. A geo-textile is required underneath the entrance to extend its functionality.
3. Flare out entrance where it meets the street so that vehicle turn radiuses do not travel over disturbed ground.
4. Perimeter Controls (silt fence) should be turned into the lot for a few feet where they meet the construction entrance.
5. Inspect weekly and within 24 hrs of a ½" of rain. Freshen or replace stone as needed to prevent off site tracking. If offsite tracking is occurring, clean up immediately, and correct the reason why the drive is failing as soon as possible. Complete repairs before the next anticipated rain and by no later than one week from the date they are noted.

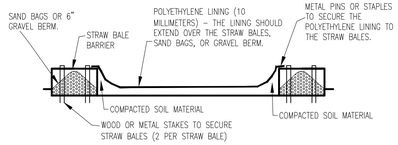


Inlet Protection

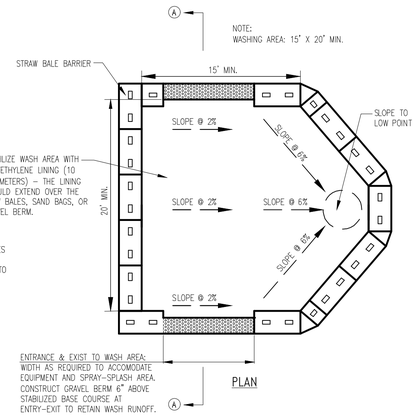
1. Install inlet protection on all curbside and rear of lot storm inlets within the flow line of the active lot.
2. Curbside inlet protection should be installed so that 3 – 4 inches of the top of the casting is exposed to allow for overflow, preventing excessive ponding.
3. Wrapping geo-textile underneath the grate for protection or straw bale barriers are PROHIBITED practices.
4. Make sure inlet protection is securely fastened to the storm grate and installed per the manufacturer's recommendations.
5. Inspect weekly and within 24 hrs of a ½" of rain. Sediment accumulation or standing water around the inlet can indicate the need for maintenance. Clean protection when clogged with sediment or when it reaches ½ of the storage capacity or height of the control. Replace protection if torn or worn. Clean sediment from street around the storm inlet and place back onto lot behind perimeter controls. Complete repairs before the next anticipated rain and by no later than one week from the day they are noted.



FRONT ELEVATION



SECTION A–A

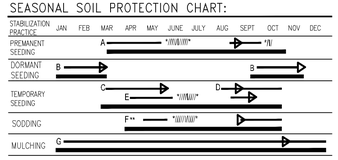


PLAN

CONCRETE WASHOUT AREA

NOT TO SCALE

SEASONAL SOIL PROTECTION CHART:



A = KENTUCKY BLUEGRASS 40 LBS/ACRE; CREEPING RED FESCUE 40 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 20 LBS/ACRE.

B = KENTUCKY BLUEGRASS 60 LBS/ACRE; CREEPING RED FESCUE 60 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 30 LBS/ACRE.

C = SPRING OATS 3 BUSHEL/ACRE

D = WHEAT OR RYE 2 BUSHEL/ACRE

E = ANNUAL RYEGRASS 40 LBS/ACRE

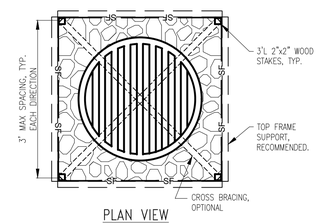
F = SOD

G = STRAW MULCH 2 TONS/ACRE

/I/ IRRIGATION NEEDED DURING JUNE, JULY, AND/OR SEPTEMBER

** IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD

SEASONAL SOIL PROTECTION CHART



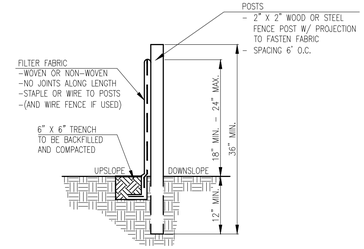
PLAN VIEW

INSTALLATION:
1. CUT FENCE FABRIC FROM A SINGLE ROLL TO ELIMINATE JOINTS. USE A MINIMUM OVERLAP 2' IF A JOINT IS NEEDED.
2. BURY 12" OF FENCE FABRIC PER THE SILT FENCE SECTION DETAIL.
3. SPACE SUPPORT EVENLY, WITH A MAXIMUM SPACING OF 3'.
4. SUPPORTS SHALL ABUT THE INLET PERIMETER WHEREVER POSSIBLE. PROVIDE A 4" BED OF NO. 2 STONE WHERE OVERFLOW FALLS ONTO UNPROTECTED SOIL.
5. PREFABRICATED WELDED WIRE UNITS ARE ACCEPTABLE.

MAINTENANCE:
1. INSPECT FENCE WEEKLY AND AFTER EACH STORM EVENT.
2. IF FENCE IS DAMAGED, REPAIR OR REPLACE IT IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES ONE THIRD OF THE HEIGHT OF THE FENCE.
4. TAKE CARE NOT TO UNDERMINE THE FENCE DURING SEDIMENT REMOVAL.
5. AFTER THE CONTRIBUTING AREA HAS BEEN STABILIZED, REMOVED THE FENCE AND REMAINING SEDIMENT, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.
6. REPLACE THE FENCE WITH ANOTHER PRACTICE – STRAW BALES (PRACTICE 3.54), GRAVEL RING (PRACTICE 3.56), OR GRAVEL BAGS (PRACTICE 3.66) – IF IT CONTINUALLY SUSTAINS SIGNIFICANT DAMAGE.

SILT FENCE INLET PROTECTION

NOT TO SCALE – PRACTICE 3.52

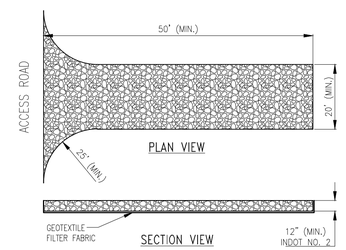


INSTALLATION:
1. THE BOTTOM 1' OF THE FENCE SHALL BE BURIED IN THE TRENCH ON THE UPSLOPE SIDE.
2. FENCE SHALL BE INSTALLED ALONG LEVEL GRADES, NOT ACROSS FLOW CHANNELS.
3. IF OPTIONAL SUPPORT WIRE FENCE IS USED, POST SPACING MAY BE EXTENDED TO 8' O.C.

MAINTENANCE:
1. INSPECT SILT FENCE PERIODICALLY (WEEKLY) AND AFTER EACH STORM EVENT.
2. IF FABRIC IS TORN OR DAMAGED OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE, OR IT IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE NOT TO UNDERMINE THE FENCE DURING SEDIMENT REMOVAL.
5. AFTER THE CONTRIBUTING AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND REMAINING SEDIMENT, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.

SILT FENCE SECTION

NOT TO SCALE – PRACTICE 3.74



PLAN VIEW

SECTION VIEW

MAINTENANCE:
1. INSPECT WEEKLY, AND AFTER EACH STORM EVENT OR HEAVY USE.
2. RESHAPE AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
3. TOPDRESS WITH CLEAN STONE AS REQUIRED. MAINTAIN MINIMUM DEPTH THROUGHOUT CONSTRUCTION.
4. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY SWEEPING OR BRUSHING. (DO NOT FLUSH AREA WITH WATER.)
5. REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.

STABLIZED CONSTRUCTION ENTRANCE

NOT TO SCALE – PRACTICE 3.0

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STATE OF INDIANA – PRELIMINARY NOT FOR CONSTRUCTION – PROFESSIONAL ENGINEER

REVISIONS AND ISSUES	DATE	BY

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JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
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INDIANAPOLIS, INDIANA 46227

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PLAN DATE: 3/26/2021		
DESIGN: AF	CHECK: AF	DRAWN: KG
PROJECT NO. 2006003		
SHEET NAME: EROSION CONTROL DETAILS		
SHEET NO. C504		

SECTION A - CONSTRUCTION PLAN ELEMENTS

A1 PLAN INDEX - SEE BELOW
A2 11"X17" PLAT - ATTACHED
A3 PROJECT NARRATIVE - THIS IS A PROPOSED 6.50 ACRE COMMERCIAL OUTLET DEVELOPMENT CONSISTING OF PROPOSED PRIVATE DRIVE, DRIVE WITH ASSOCIATED INFRASTRUCTURE. ADDTIONALLY, A PROPOSED CAR WASH WILL BE CONSTRUCTED SIMULTANEOULSY WITH THE OVERALL DEVELOPMENT. THE CAR WASH WILL CONSISIT OF A NEW BUILDING, PARKING LOT, AND ASSOCIATED INFRASTRUCTURE.
A4 VICINITY MAP - SEE SHEET C100
A5 LEGAL DESCRIPTION - PART OF NE $\frac{1}{4}$ OF SECTION 10 - TOWNSHIP 12N - RANGE 4E, FRANKLIN TOWNSHIP, JOHNSON COUNTY, INDIANA.
LAT: 39°30'09" N
LONG: 86°04'10" W
A6 LOCATION OF ALL SITE IMPROVEMENTS - SEE SITE PLAN SHEET C201
A7 HYDROLOGIC UNIT CODE (14 DIGIT) - 05120204090030
A8 NOTATION OF ANY STATE OR FEDERAL WATER QUALITY PERMITS - 401 WATER QUALITY CERTIFICATION (IDEM): NONE
SECTION 404 PERMIT (USACE): NONE 9
CONSTRUCTION IN A FLOODWAY (INDNR): NONE
GENERAL PERMIT RULE FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (IDEM RULE 5): APPLIED FOR
A9 SPECIFIC POINTS WHERE STORMWATER DISCHARGE LEAVES SITE
THE PROPOSED INFRASTRUCTURE IMPROVEMENTS WILL HAVE MASTER PLANNED PIPE NETWORKS THAT WILL CONVEY RUNOFF FROM THE VARIOUS COMMERCIAL OUTLOTS TO ONE OF THE TWO DETENTION BASINS.
FINAL DESIGN OF THE PIPE NETWORK CAN BE FOUND ON SHEET C401...
A10 LOCATION AND NAME OF WETLANDS, LAKES AND WATER COURSES ON AND ADJACENT TO SITE - NONE
A11 IDENTIFICATION OF ALL RECEIVING WATERS - YOUNGS CREEK BREWER/CANARY DITCHES
A12 IDENTIFICATION OF POTENTIAL DISCHARGE TO GROUND WATER - NONE KNOWN
A13 100 YEAR FLOODPLAINS, FLOODWAYS, AND FLOODWAY FRINGES - NONE LOCATED WITHIN OR ADJACENT TO THE SITE.
A14 DISCHARGE
10 YEAR EX.- X
10 YEAR PR.- X
A15 ADJACENT LAND USES:
NORTH: COMMERCIAL DEVELOPMENT
SOUTH: COMMERCIAL DEVELOPMENT
EAST: COMMERCIAL DEVELOPMENT
WEST: RESIDENTIAL DEVELOPMENT
A16 CONSTRUCTION LIMITS - STORMWATER POLLUTION PREVENTION PLAN, SHEET C501-C503
A17 IDENTIFICATION OF EXISTING VEGETATIVE COVER - SEE EXISTING CONDITIONS PLAN C102
A18 SOILS MAP W/ SOIL DESCRIPTIONS AND LIMITATIONS - SEE GENERAL INFORMATION PLAN C101
A19 LOCATIONS, SIZE & DIMENSIONS OF PROPOSED STORMWATER SYSTEMS - SEE GRADING AND UTILITY PLAN SHEETS C301-C401
A20 PLANS FOR OFF-SITE CONSTRUCTION ACTIVITIES - NONE
A21 LOCATIONS OF PROPOSED SOIL STOCKPILES AND/OR BORROW/DISPOSAL AREAS - SEE SHEET C501-C503
A22 EXISTING SITE TOPOGRAPHY - SEE EXISTING CONDITIONS PLAN C102
A23 PROPOSED FINAL TOPOGRAPHY - SEE GRADING PLAN SHEETS C301
A24 INDIVIDUAL IN CHARGE OF SWPPP IMPLEMENTATION - SEE SHEET C501

SECTION B - SWPP - CONSTRUCTION PHASE

B1 DESCRIPTION OF POTENTIAL POLLUTANT SOURCES - POTENTIAL POLLUTANTS FROM CONSTRUCTION ACTIVITY SUCH AS OIL, GREASE, ANTIFREEZE, GASOLINE AND DIESEL FUEL FROM CONSTRUCTION EQUIPMENT; SOIL EROSION; FERTILIZER AND PESTICIDES FROM LANDSCAPING.
B2 SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION RELATIVE TO LAND DISTURBING ACTIVITIES:
1. SEE SHEET C501 FOR CONSTRUCTION SEQUENCING.
B3 CONSTRUCTION ENTRANCE - SEE STORMWATER POLLUTION PREVENTION PLAN SHEET C501 FOR LOCATION AND SHEET C504 FOR CONSTRUCTION ENTRANCE DETAILS AND SPECIFICATIONS.
B4 SEDIMENT CONTROL PLAN FOR SHEET FLOW AREAS - SEE STORMWATER POLLUTION PREVENTION PLAN SHEET C501,C502,C503.
B5 SEDIMENT CONTROL PLAN FOR CONCENTRATED FLOW AREAS - SEE STORMWATER POLLUTION PREVENTION PLAN SHEET C501-C502
B6 STORM SEWER INLET PROTECTION MEASURE LOCATIONS AND SPECS - SEE STORMWATER POLLUTION PREVENTION PLAN SHEET C502 FOR LOCATIONS AND SHEET C504 FOR CONSTRUCTION DETAILS AND SPECIFICATIONS.
B7 RUNOFF CONTROL MEASURES - SEE STORMWATER POLLUTION PREVENTION PLAN SHEET C502 FOR LOCATIONS AND SHEET C504 FOR CONSTRUCTION DETAILS AND SPECIFICATIONS.
B8 STORM WATER OUTLET PROTECTION SPECS - SEE STORMWATER POLLUTION PREVENTION PLAN SHEET C501 FOR LOCATIONS AND SHEET C502 FOR CONSTRUCTION DETAILS AND SPECIFICATIONS.
B9 GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECS - SEE STORMWATER POLLUTION PREVENTION PLAN SHEETS C501 FOR LOCATIONS AND SHEETS C504 FOR CONSTRUCTION DETAILS AND SPECIFICATIONS.
B10 STORMWATER QUALITY CONSTRUCTION DETAILS - SEE STORMWATER POLLUTION PREVENTION PLAN SHEETS C504 FOR DETAILS AND C505 FOR SPECIFICATIONS.
B11 TEMPORARY SURFACE STABILIZATION METHOD FOR EACH SEASON - SEE SEASONAL SOIL PROTECTION CHART SHEET C501
B12 PERMANENT SURFACE STABILIZATIONS - SEE STORMWATER POLLUTION PREVENTION PLAN SHEET C503 AND L101 FOR LOCATIONS AND SHEETS C504 AND C505 FOR CONSTRUCTION DETAILS AND SPECIFICATIONS.
B13 MATERIAL HANDLING AND SPILL PREVENTION PLAN:

PURPOSE:

THE INTENTION OF THIS SPILL PREVENTION, CONTROL AND COUNTERMEASURES (SPCC) IS TO ESTABLISH THE PROCEDURES AND EQUIPMENT REQUIRED TO PREVENT THE DISCHARGE OF OIL AND HAZARDOUS SUBSTANCES IN QUANTITIES THAT VIOLATE APPLICABLE WATER QUALITY STANDARDS, CAUSE A SHEEN UPON OR DISCOLORATION OF THE SURFACE OF NAVIGABLE WATERS OR ADJOINING SHORELINES, OR CAUSE SLUDGE OR EMULSION TO BE DEPOSITED BENEATH THE SURFACE OF THE WATER OR ADJOINING SHORELINES. THE PLAN ALSO ESTABLISHES THE ACTIVITIES REQUIRED TO MITIGATE SUCH DISCHARGES (I.E., COUNTERMEASURES) SHOULD THEY OCCUR.

DEFINITIONS:

POLLUTANT: MEANS POLLUTANT OF ANY KIND OR IN ANY FORM, INCLUDING BUT NOT LIMITED TO SEDIMENT, PAINT, CLEANING AGENTS, CONCRETE WASHOUT, PESTICIDES, NUTRIENTS, TRASH, HYDRAULIC FLUIDS, FUEL, OIL, PETROLEUM, FUEL OIL, SLUDGE, OIL REFUSE, AND OIL MIXED WITH WASTES OTHER THAN DREDGED SOIL.

DISCHARGE:

INCLUDES BUT IS NOT LIMITED TO, ANY SPILLING, LEAKING, PUMPING, POURING, EMITTING, EMPTYING, OR DUMPING.

NAVIGABLE WATERS:

MEANS ALL WATERS OF THE UNITES STATES THAT ARE CONNECTED WITH A NAVIGABLE STREAM, LAKE, OR SEA. [NOTE: THIS DEFINITION IS USUALLY INTERPRETED TO MEAN ANY WASTEWATER(EVEN NORMALLY DRY WASH OR STORM SEWER) THAT EVENTUALLY DRAINS INTO A NAVIGABLE STREAM].

PLAN REVIEW AND AMENDMENTS:

THIS PLAN SHALL BE REVIEWED AND/OR AMENDED, IF NECESSARY, WHENEVER THERE IS A CHANGE IN THE DESIGN OF THE SITE, CONSTRUCTION, OPERATION, OR MAINTENANCE WHICH MATERIALLY AFFECTS THE SITES' POTENTIAL FOR THE DISCHARGE OF REGULATED MATERIAL.

PREDICTION OF POTENTIAL SPILLS:

1. NEAREST NAVIGABLE WATER: EAGLE CREEK
2. POSSIBLE SPILL SOURCES (DURING AND POST CONSTRUCTION): VEHICULAR SOURCES SUCH AS LEAKING FUEL OR OIL, BRAKE FLUID, GREASE, ANTIFREEZE; CONSTRUCTION TRASH AND DEBRIS, BIOLOGICAL AGENTS FOUND IN TRASH AND DEBRIS, FERTILIZERS, HOUSEHOLD ITEMS INCLUDING BUT NOT LIMITED TO CLEANING AGENTS, CHEMICALS, PAINT, HERBICIDES AND PESTICIDES.
3. GROUNDWATER CONTAMINATION: THIS FACILITY MAINTAINS NO ABOVE GROUND OR UNDER GROUND STORAGE TANKS. THEREFORE, IT IS FELT THAT THERE IS LITTLE OR NO POSSIBILITY OF POST CONSTRUCTION GROUNDWATER CONTAMINATION.

ALERT PROCEDURES FOR SPILLS:

1. ANY PERSONNEL OBSERVING A SPILL WILL IMMEDIATELY INSTIGATE THE FOLLOWING PROCEDURE:
   a.) DIALING "0" FROM ANY TELEPHONE.
   b.) NOTIFY THE APPROPRIATE EMERGENCY PERSONNEL.
2. THE EMERGENCY COORDINATOR WILL THEN TAKE THE FOLLOWING ACTIONS:
   a.) BARRICADE THE AREA ALLOWING NO VEHICLES TO ENTER OR LEAVE THE SPILL ZONE.
   b.) NOTIFY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, OFFICE OF EMERGENCY RESPONSE BY CALLING THE APPROPRIATE TELEPHONE NUMBER:
   OFFICE: 317-233-7745
   TOLL FREE: 800-233-7745
   ALSO THE NATIONAL RESPONSE CENTER AT 800-424-8802 AND PROVIDE THE FOLLOWING INSTRUCTIONS:
   - TIME OF OBSERVATION OF THE SPILL
   - LOCATION OF THE SPILL
   - IDENTITY OF MATERIAL SPILLED
   - PROBABLE SOURCE OF THE SPILL
   - PROBABLE TIME OF THE SPILL
   - VOLUME OF THE SPILL AND DURATION
   - PRESENT AND ANTICIPATED MOVEMENT OF THE SPILL
   - WEATHER CONDITIONS
   - PERSONNEL AT THE SCENE
   - ACTION INITIATED BY PERSONNEL
   c.) NOTIFY THE CITY OF FRANKLIN FIRE DEPARTMENT PHONE: 9-1-1
   d.) NOTIFY THE JOHNSON COUNTY SWCD OFFICE (317) 736-9540
   e.) NOTIFY THE MS4 DEPARTMENT OF FRANKLIN STORMWATER DEPARTMENT (888) 736-3640
   f.) NOTIFY THE CITY OF FRANKLIN POLICE DEPARTMENT PHONE: 9-1-1
   g.) NOTIFY WASTE RECOVERY CONTRACTOR, MAINTENANCE PERSONNEL OR OTHER CONTRACTUAL PERSONNEL AS NECESSARY FOR CLEANUP.
   h.) COORDINATE AND MONITOR CLEANUP UNTIL THE SITUATION HAS BEEN STABILIZED AND ALL SPILLS HAVE BEEN ELIMINATED.
   i.) COOPERATE WITH THE IDEM-OER OR PROCEDURES AND REPORTS INVOLVED WITH THE EVENT.

CLEANUP PARAMETERS:

1. THE OWNER SHALL BE CONTINUALLY KEPT INFORMED, MAINTAIN LISTS OF QUALIFIED CONTRACTORS AND AVAILABLE VAC-TRUCKS, TANK PUMPERS AND OTHER EQUIPMENT READILY ACCESSIBLE FOR CLEAN UP OPERATIONS. IN ADDITION, A CONTINUALLY UPDATED LIST OF AVAILABLE ABSORBENT MATERIALS AND CLEAN-UP SUPPLIES SHOULD BE KEPT ON SITE.
2. ALL MAINTENANCE PERSONNEL WILL BE MADE AWARE OF TECHNIQUES FOR PREVENTION OF SPILLS. THEY WILL BE INFORMED OF THE REQUIREMENTS AND PROCEDURES OUTLINED IN THIS PLAN. THEY WILL BE KEPT ABREAST OF CURRENT DEVELOPMENTS OR NEW INFORMATION ON THE PREVENTION OF SPILLS AND / OR NECESSARY ALTERATIONS TO THIS PLAN.
3. WHEN SPILLS OCCUR WHICH COULD ENDANGER HUMAN LIFE AND THIS BECOMES PRIMARY CONCERN, THE DISCHARGE OF THE LIFE SAVING PROTECTION FUNCTION WILL BE CARRIED OUT BY THE LOCAL POLICE AND FIRE DEPARTMENTS.
4. ABSORBENT MATERIALS, WHICH ARE USED IN CLEANING UP SPILLED MATERIALS, WILL BE DISPOSED OF IN A MANNER SUBJECT TO THE APPROVAL OF THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT.
5. FLUSHING OF SPILLED MATERIAL WITH WATER WILL NOT BE PERMITTED UNLESS SO AUTHORIZED BY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT.

B14 MONITORING AND MAINTENANCE GUIDELINES FOR POLLUTION PREVENTION MEASURES:

SILT FENCE MAINTENANCE REQUIREMENTS

1. INSPECT THE SILT FENCE PERIODICALLY AND AFTER EACH STORM EVENT.
2. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE AT IT'S LOWEST POINT OR IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
5. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE AND STABILIZE IT.

TEMPORARY GRAVEL CONSTRUCTION MAINTENANCE REQUIREMENTS

1. INSPECT ENTRANCE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER STORM EVENTS OR HEAVY USE.
2. RESHAPE AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
3. TOPDRESS WITH CLEAN STONE AS NEEDED.
4. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO STREETS BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED IF THE WATER IS CONVEYED INTO A SEDIMENT TRAP OR BASIN.
5. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.

TEMPORARY BEEHIVE INLET SEDIMENT TRAP MAINTENANCE REQUIREMENTS

1. INSPECT TEMPORARY SEDIMENT TRAPS AFTER EACH STORM EVENT AND IMMEDIATELY REPAIR ANY EROSION AND PIPING HOLES.
2. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6" OF CASTING
3. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, REMOVE THE STRUCTURE AND SEDIMENT, SMOOTH THE SITE TO BLEND WITH ADJOINING AREAS AND STABILIZE IT.

CURB INLET PROTECTION MAINTENANCE REQUIREMENTS

1. AFTER EACH STORM EVENT REMOVE THE SEDIMENT AND REPLACE THE GRAVEL, REPLACE THE GEOTEXTILE FABRIC IF USED.
2. PERIODICALLY REMOVE SEDIMENT AND TRACKED-ON SOIL FROM THE STREET, WITHOUT FLUSHING, TO REDUCE THE THE SEDIMENT LOAD ON THE INLET PROTECTION.
3. INSPECT CASTING COVER PERIODICALLY FOR DAMAGE AND REPAIR. KEEP GRATES FREE OF DEBRIS.
4. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE SEDIMENT DEPOSITS AND DISPOSE OF THEM PROPERLY.

EROSION CONTROL BLANKET MAINTENANCE REQUIREMENTS

1. DURING VEGETATIVE ESTABLISHMENT, INSPECT AFTER EACH STORM EVENT FOR ANY EROSION BELOW THE BLANKET.
2. IF ANY AREA(S) SHOW EROSION, PULL BACK THAT PORTION OF THE BLANKET COVERING IT, RE-SEED THE AREA AND RELAY AND STAPLE THE BLANKET.
3. AFTER VEGETATIVE ESTABLISHMENT CHECK THE TREATED AREA PERIODICALLY.

B15 EROSION & SEDIMENT CONTROL SPECIFICATIONS FOR INDIVIDUAL BUILDING LOTS -THERE ARE NO INDIVIDUAL BUILDING LOTS ASSOCIATED WITH THIS PROJECT.

SECTION C - STORMWATER POLLUTION PREVENTION PLAN - POST-CONSTRUCTION PHASE

C1 DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE: SILT AND SEDIMENT FROM EXPOSED SOILS, LEAVES, MULCH, VEHICULAR SOURCES SUCH AS LEAKING FUEL OR OIL, BRAKE FLUID, BRAKE DUST, GREASE, ANTIFREEZE, METALS, RUBBER FRAGMENTS, ROAD GRIT, SALTS AND SANDS, CONSTRUCTION TRASH AND DEBRIS, FERTILIZERS, CLEANING AGENTS, CHEMICALS, PAINT, ANIMAL WASTE, ELEVATED STORM RUNOFF TEMPERATURES, PESTICIDES AND PATHOGENS.
C2 SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION:
1. INSPECT AND MAINTAIN ALL EROSION CONTROL MEASURES AS DETAILED IN THE STORMWATER POLLUTION PREVENTION MEASURES MAINTENANCE REQUIREMENTS BEGINNING IMMEDIATELY AFTER INSTALLATION AND CONTINUING UNTIL VEGETATION HAS BEEN SUFFICIENTLY ESTABLISHED AND ALL CONSTRUCTION ACTIVITY IS COMPLETE.
2. REMOVE ALL SILT FENCES, ETC. ONLY AFTER SEEDING AND SUFFICIENT VEGETATIVE GROWTH HAS BEEN ESTABLISHED IN EACH AREA TO A POINT WHERE SEDIMENT/POLLUTANTS WILL NOT ENTER THE CREEK.
3. INSPECTION AND MAINTENANCE OF ALL AREAS IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ACCEPTED BY THE GOVERNING MS4 OFFICE. INSPECTION AND MAINTENANCE OF BMP'S SHALL FOLLOW TIME TABLES SET FORTH IN THE MAINTENANCE AND OPERATIONS MANUAL.
C3 DESCRIPTION OF PROPOSED POST CONSTRUCTION STORMWATER QUALITY MEASURES -
1. PERMANENT SEEDING AND LANDSCAPE PLANT MATERIAL
2. ON GOING MAINTENANCE BY THE OWNER TO INSURE THAT SEDIMENT, TRASH AND POLLUTANTS DO NOT LEAVE THE SITE.
3. SEE BMP OPERATIONS AND MAINTENANCE MANUAL (O&M MANUAL) FOR DETAILS RELATED TO POST CONSTRUCTION STORMWATER QUALITY MEASURES.
C4 LOCATION, DIMENSIONS, SPECIFICATIONS, AND CONSTRUCTION DETAILS OF EACH STORMWATER QUALITY MEASURE - SEE STORMWATER POLLUTION PREVENTION PLAN SHEETS C501-C503 FOR LOCATIONS AND SHEET C504 FOR DETAILS AND SPECIFICATIONS.
C5 DESCRIPTION OF MAINTENANCE GUIDELINES FOR POST CONSTRUCTION STORMWATER QUALITY MEASURE -

EQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION:
1. INSPECT AND MAINTAIN ALL EROSION CONTROL MEASURES AS DETAILED IN THE STORMWATER POLLUTION PREVENTION MEASURES MAINTENANCE REQUIREMENTS BEGINNING IMMEDIATELY AFTER INSTALLATION AND CONTINUING UNTIL VEGETATION HAS BEEN SUFFICIENTLY ESTABLISHED AND ALL CONSTRUCTION ACTIVITY IS COMPLETE.
REMOVE ALL SILT FENCES, ETC. ONLY AFTER SEEDING AND SUFFICIENT VEGETATIVE GROWTH HAS BEEN ESTABLISHED IN EACH AREA TO A POINT WHERE SEDIMENT/POLLUTANTS WILL NOT ENTER STORM INLETS, DETENTION FACILITY, OR ONSITE SWALES.
2. INSPECTION AND MAINTENANCE OF ALL AREAS IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ACCEPTED BY THE GOVERNING MS4 OFFICE. INSPECTION AND MAINTENANCE OF BMP'S SHALL FOLLOW TIME TABLES SET FORTH IN THE MAINTENANCE AND OPERATIONS MANUAL.

CONSTRUCTION AND POST CONSTRUCTION

THE PURPOSE OF STAGING CONSTRUCTION DURING THE VARIOUS PHASES OF THE PROJECT IS TO LIMIT THE AMOUNT OF GROUND DISTURBED AT ANY GIVEN TIME AND TO PREVENT SEDIMENT FROM LEAVING THE SITE. FOR THIS REASON THE FOLLOWING SEQUENCING SHOULD BE FOLLOWED AS MUCH AS POSSIBLE.

CALL INDIANA UNDERGROUND PLANT PROTECTION SERVICE ("HOLEY MOLEY") AT 800-382-5544 TO CHECK THE LOCATION OF ANY UTILITIES TWO DAYS BEFORE WORK IS TO COMMENCE.

ESTABLISH ON-SITE LOCATION FOR OWNER/OPERATOR/CONTRACTOR PLACEMENT OF APPROVED PLANS AND RULE 5 NOI INSPECTION DOCUMENTATION.

CITY OF FRANKLIN STORMWATER DEPARTMENT MUST BE NOTIFIED AT LEAST 48 HOURS BEFORE CONSTRUCTION IS SCHEDULED TO BEGIN. THE CONTRACTOR SHALL CONTACT THE DEPARTMENT TO SET UP A PRE-CONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION.

1. INSTALL A TEMPORARY STONE ACCESS DRIVE OFF ROAD (SEE EROSION CONTROL PLAN, SHEET C501).
2. CONSTRUCT RULE 5 INFORMATION POSTING SITE, INSTALL TRASH DUMPSTER, AND PLACE PORT-O-LET.
3. INSTALL CONSTRUCTION AND SILT FENCING AS SHOWN ON THE PLANS.
4. PLACE TEMPORARY SEED IN ALL AREAS WHERE WORK WILL DISCONTINUE FOR 14 DAYS OR MORE.
5. IF SEEDED AREAS DO NOT PRODUCE A MINIMUM OF 70 PERCENT VEGETATIVE COVER CONTRACTOR SHALL RE-SEED TO OBTAIN ADEQUATE VEGETATIVE COVER.

ADDITIONAL STORMWATER POLLUTION PREVENTION MEASURES

VEHICLE AND EQUIPMENT MAINTENANCE

DESCRIPTION AND PURPOSE

PREVENT OR REDUCE THE CONTAMINATION OF STORMWATER RESULTING FROM VEHICLE AND EQUIPMENT MAINTENANCE BY RUNNING A "DRY AND CLEAN SITE". THE BEST OPTION WOULD BE TO PERFORM MAINTENANCE ACTIVITIES AT AN OFFSITE FACILITY. IF THIS OPTION IS NOT AVAILABLE THEN WORK SHOULD BE PERFORMED IN DESIGNATED AREAS ONLY, WHILE PROVIDING COVER FOR MATERIALS STORED OUTSIDE, CHECKING FOR LEAKS AND SPILLS, AND CONTAINING AND CLEANING UP SPILLS IMMEDIATELY.

SUITABLE APPLICATIONS

THESE PROCEDURES ARE SUITABLE ON ALL CONSTRUCTION PROJECTS WHERE ON ONSITE YARD AREA IS NECESSARY FOR STORAGE AND MAINTENANCE OF HEAVY EQUIPMENT AND VEHICLES.

LIMITATIONS

ONSITE VEHICLE AND EQUIPMENT MAINTENANCE SHOULD ONLY BE USED WHERE IT IS IMPRACTICAL TO SEND VEHICLES AND EQUIPMENT OFFSITE FOR MAINTENANCE AND REPAIR. SENDING VEHICLES/EQUIPMENT OFFSITE SHOULD BE DONE IN CONJUNCTION WITH A STABILIZED CONSTRUCTION ENTRANCE/EXIT. OUTDOOR VEHICLE OR EQUIPMENT MAINTENANCE IS A POTENTIALLY SIGNIFICANT SOURCE OF STORMWATER POLLUTION. ACTIVITIES THAT CAN CONTAMINATE STORMWATER INCLUDE ENGINE REPAIR AND SERVICE, CHANGING OR REPLACEMENT OF FLUIDS, AND OUTDOOR EQUIPMENT STORAGE AND PARKING (ENGINE FLUID LEAKS).

IMPLEMENTATION

IF MAINTENANCE MUST OCCUR ONSITE, USE DESIGNATED AREAS, LOCATED AWAY FROM DRAINAGE COURSES. DEDICATED MAINTENANCE AREAS SHOULD BE PROTECTED FROM STORMWATER RUNON AND RUNOFF, AND SHOULD BE LOCATED AT LEAST 50 FT FROM DOWNSTREAM DRAINAGE FACILITIES AND WATERCOURSES.
DRIP PANS OR ABSORBENT PADS SHOULD BE USED DURING VEHICLE AND EQUIPMENT MAINTENANCE WORK THAT INVOLVES FLUIDS, UNLESS THE MAINTENANCE WORK IS PERFORMED OVER ON IMPERMEABLE SURFACE IN A DEDICATED MAINTENANCE AREA.
PLACE A STOCKPILE OF SPILL CLEANUP MATERIALS WHERE IT WILL BE READILY ACCESSIBLE.
ALL FUELING TRUCKS AND FUELING AREAS ARE REQUIRED TO HAVE SPILL KITS AND/OR USE OTHER SPILL PROTECTION DEVICES.
USE ABSORBENT MATERIALS ON SMALL SPILLS. REMOVE THE ABSORBENT MATERIALS PROMPTLY AND DISPOSE OF PROPERLY.
INSPECT ONSITE VEHICLES AND EQUIPMENT DAILY AT STARTUP FOR LEAKS, AND REPAIR IMMEDIATELY.
KEEP VEHICLES AND EQUIPMENT CLEAN; DO NOT ALLOW EXCESSIVE BUILD-UP OF OIL AND GREASE.
SEGREGATE AND RECYCLE WASTES, SUCH AS GREASES, USED OIL OR OIL FILTERS, ANTIFREEZE, CLEANING SOLUTIONS, AUTOMOTIVE BATTERIES, HYDRAULIC AND TRANSMISSION FLUIDS. PROVIDE SECONDARY CONTAINMENT AND COVERS FOR THESE MATERIALS IF STORED ONSITE.
TRAIN EMPLOYEES AND SUBCONTRACTORS IN PROPER MAINTENANCE AND SPILL CLEANUP PROCEDURES.
DRIP PANS OR PLASTIC SHEETING SHOULD BE PLACED UNDER ALL VEHICLES AND EQUIPMENT PLACED ON DOCKS, BARGES, OR OTHER STRUCTURES OVER WATER BODIES WHEN THE VEHICLE OR EQUIPMENT IS PLANNED TO BE IDLE FOR MORE THAN 1 HOUR.
PROPERLY DISPOSE OF USED OILS, FLUIDS, LUBRICANTS, AND SPILL CLEANUP MATERIALS.
DO NOT PLACE USED OIL IN A DUMPSTER OR POUR INTO A STORM DRAIN OR WATERCOURSE.
PROPERLY DISPOSE OF OR RECYCLE USED BATTERIES.
DO NOT BURY USED TIRES.
REPAIR LEAKS OF FLUIDS AND OIL IMMEDIATELY.
LISTED BELOW IS FURTHER INFORMATION IF YOU MUST PERFORM VEHICLE OR EQUIPMENT MAINTENANCE ONSITE.

INSPECTION AND MAINTENANCE

INSPECT AND VERIFY THAT BMP'S ARE IN PLACE PRIOR TO THE COMMENCEMENT OF ASSOCIATED ACTIVITIES. WHILE ACTIVITIES ASSOCIATED WITH THE BMP ARE UNDER WAY, INSPECT WEEKLY TO VERIFY CONTINUED BMP IMPLEMENTATION.
KEEP AMPLE SUPPLIES OF SPILL CLEANUP MATERIALS ONSITE.
MAINTAIN WASTE FLUID CONTAINERS IN LEAK PROOF CONDITION.
VEHICLES AND EQUIPMENT SHOULD BE INSPECTED ON EACH DAY OF USE. LEAKS SHOULD BE REPAIRED IMMEDIATELY OR THE PROBLEM VEHICLE(S) OR EQUIPMENT SHOULD BE REMOVED FROM THE PROJECT SITE.
INSPECT EQUIPMENT FOR DAMAGED HOSES AND LEAKY GASKETS ROUTINELY. REPAIR OR REPLACE AS NEEDED.

VEHICLE AND EQUIPMENT FUELING

DESCRIPTION AND PURPOSE

VEHICLE EQUIPMENT FUELING PROCEDURES AND PRACTICES ARE DESIGNED TO PREVENT FUEL SPILLS AND LEAKS, AND REDUCE OR ELIMINATE CONTAMINATION OF STORMWATER. THIS CAN BE ACCOMPLISHED BY USING OFFSITE FACILITIES, FUELING IN DESIGNATED AREAS ONLY, ENCLOSING OR COVERING STORED FUEL, IMPLEMENTING SPILL CONTROLS, AND TRAINING EMPLOYEES AND SUBCONTRACTORS IN PROPER FUELING PROCEDURES.

LIMITATIONS

ONSITE VEHICLE AND EQUIPMENT FUELING SHOULD ONLY BE USED WHERE IT IS IMPRACTICAL TO SEND VEHICLES AND EQUIPMENT OFFSITE FOR FUELING. SENDING VEHICLES AND EQUIPMENT OFFSITE SHOULD BE DONE IN CONJUNCTION WITH A STABILIZED CONSTRUCTION ENTRANCE/EXIT.

MPLEMENTATION

USE OFFSITE FUELING STATIONS AS MUCH AS POSSIBLE. THESE BUSINESSES ARE BETTER EQUIPPED TO HANDLE FUEL AND SPILLS PROPERLY. PERFORMING THIS WORK OFFSITE CAN ALSO BE ECONOMICAL BY ELIMINATING THE NEED FOR A SEPARATE FUELING AREA AT A SITE.
DISCOURAGE "TOPPING-OFF" OF FUEL TANKS.
ABSORBENT SPILL CLEANUP MATERIALS AND SPILL KITS SHOULD BE AVAILABLE IN FUELING AREAS AND ON FUELING TRUCKS, AND SHOULD BE DISPOSED OF PROPERLY AFTER USE.
DRIP PANS OR ABSORBENT POOLS SHOULD BE USED DURING VEHICLE AND EQUIPMENT FUELING, UNLESS THE FUELING IS PERFORMED OVER AN IMPERMEABLE SURFACE IN A DEDICATED FUELING AREA.
USE ABSORBENT MATERIALS ON SMALL SPILLS. DO NOT HOSE DOWN OR BURY THE SPILL. REMOVE THE ABSORBENT MATERIALS PROMPTLY AND DISPOSE OF PROPERLY.
AVOID MOBILE FUELING OF MOBILE CONSTRUCTION EQUIPMENT AROUND THE SITE; RATHER, TRANSPORT THE EQUIPMENT TO DESIGNATED FUELING AREAS.
TRAIN EMPLOYEES AND SUBCONTRACTORS IN PROPER FUELING AND CLEANUP PROCEDURES.
DEDICATED FUELING AREAS SHOULD BE PROTECTED FROM STORMWATER RUNON AND RUNOFF, AND SHOULD BE LOCATED AT LEAST 50 FT. AWAY FROM DOWNSTREAM DRAINAGE FACILITIES AND WATERCOURSES. FUELING MUST BE PERFORMED ON LEVEL-GRADE AREAS.
PROTECT FUELING AREAS WITH BERMS AND DIKES TO PREVENT RUNON, RUNOFF, AND TO CONTAIN SPILLS.
NOZZLES USED IN VEHICLE AND EQUIPMENT FUELING SHOULD BE EQUIPPED WITH AN AUTOMATIC SHUTOFF TO CONTROL DRIPS.
FUELING OPERATIONS SHOULD NOT BE LEFT UNATTENDED.
FEDERAL, STATE, AND LOCAL REQUIREMENTS SHOULD BE OBSERVED FOR ANY STATIONARY ABOVE GROUND STORAGE TANKS.

INSPECTION AND MAINTENANCE

VEHICLES AND EQUIPMENT SHOULD BE INSPECTED EACH DAY OF USE FOR LEAKS. LEAKS SHOULD BE REPAIRED IMMEDIATELY OR PROBLEM VEHICLES OR EQUIPMENT SHOULD BE REMOVED FROM THE PROJECT SITE.
KEEP AMPLE SUPPLIES OF SPILL CLEANUP MATERIALS ONSITE.
IMMEDIATELY CLEAN UP SPILLS AND PROPERLY DISPOSE OF CONTAMINATED SOIL AND CLEANUP MATERIALS.

SOLID WASTE MANAGEMENT

DESCRIPTION AND PURPOSE

SOLID WASTE MANAGEMENT PROCEDURES AND PRACTICES ARE DESIGNED TO PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORMWATER FROM SOLID OR CONSTRUCTION WASTE BY PROVIDING DESIGNATED WASTE COLLECTION AREAS AND CONTAINERS, ARRANGING FOR REGULAR DISPOSAL, AND TRAINING EMPLOYEES AND SUBCONTRACTORS.

SUITABLE APPLICATIONS

THIS BMP IS SUITABLE FOR CONSTRUCTION SITES WHERE THE FOLLOWING WASTES ARE GENERATED OR STORED:

- SOLID WASTE GENERATED FROM TREES AND SHRUBS REMOVED DURING LAND CLEARING, DEMOLITION OF EXISTING STRUCTURES (RUBBLE), AND BUILDING CONSTRUCTION.
- PACKING MATERIALS INCLUDING WOOD, PAPER, AND PLASTIC.
- SCRAP OR SURPLUS BUILDING MATERIALS INCLUDING SCRAP METALS, RUBBER, PLASTIC, GLASS PIECES AND MASONRY PRODUCTS.
- DOMESTIC WASTES INCLUDING FOOD CONTAINERS SUCH AS BEVERAGE CANS, COFFEE CUPS, PAPER BAGS, PLASTIC WRAPPERS, AND CIGARETTES.
- CONSTRUCTION WASTES INCLUDING BRICK, MORTAR, TIMBER, STEEL AND METAL SCRAPS, PIPE AND ELECTRICAL CUTTINGS, NON-HAZARDOUS EQUIPMENT PORTS, STYROFOAM AND OTHER MATERIALS SEND TRANSPORT AND PACKAGE CONSTRUCTION MATERIALS.

IMPLEMENTATION

THE FOLLOWING STEPS WILL HELP KEEP A CLEAN SITE AND REDUCE STORMWATER POLLUTION:

- SELECT DESIGNATED WASTE COLLECTION AREAS ONSITE.
- INFORM TRASH-HAULING CONTRACTORS THAT YOU WILL ACCEPT ONLY WATERTIGHT DUMPSTERS FOR ONSITE USE.
- INSPECT DUMPSTERS FOR LEAKS AND REPAIR ANY DUMPSTER THAT IS NOT WATERTIGHT.
- PROVIDE AN ADEQUATE NUMBER OF CONTAINERS WITH LIDS OR COVERS THAT CAN BE PLACED OVER THE CONTAINER TO KEEP RAIN OUT OR TO PREVENT LOSS OF WASTES WHEN IT IS WINDY.
- PLAN FOR ADDITIONAL CONTAINERS AND MORE FREQUENT PICKUP DURING THE DEMOLITION PHASE OF CONSTRUCTION.
- COLLECT SITE TRASH DAILY, ESPECIALLY DURING RAINY AND WINDY CONDITIONS.
- REMOVE THIS SOLID WASTE PROMPTLY SINCE EROSION AND SEDIMENT CONTROL DEVICES TEND TO COLLECT LITTER.
- MAKE SURE THAT TOXIC LIQUID WASTES (USED OILS, SOLVENTS, AND PAINTS) AND CHEMICALS (ACIDS, PESTICIDES, ADDITIVES, CURING COMPOUNDS) ARE NOT DISPOSED OF IN DUMPSTERS DESIGNATED FOR CONSTRUCTION DEBRIS.
- DO NOT HOSE OUT DUMPSTERS ON THE CONSTRUCTION SITE. LEAVE DUMPSTER CLEANING TO THE TRASH HAULING CONTRACTOR.
- ARRANGE FOR REGULAR WASTE COLLECTION BEFORE CONTAINERS OVERFLOW.
- CLEAN UP IMMEDIATELY IF A CONTAINER DOES SPILL.
- MAKE SURE THAT CONSTRUCTION WASTE IS COLLECTED, REMOVED, AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.
- INSPECT THE STORM MANHOLE WITH SNOUT. REMOVE ANY FLOATING DEBRIS ON A REGULAR BASIS AND HAVE SUMPS PROFESSIONALLY CLEANED ONCE A YEAR. **CAUTION SHOULD BE NOTED - ALL SUMPS ARE DEEP AND POTENTIALLY DANGEROUS. EXTREME CARE AND SAFETY MEASURES ALONG WITH OSHA GUIDELINES SHOULD BE FOLLOWED.

COLLECTION, STORAGE, AND DISPOSAL

LITTERING ON THE PROJECT SITE SHOULD BE PROHIBITED.
TO PREVENT CLOGGING OF THE STORM DRAINAGE SYSTEM, LITTER AND DEBRIS REMOVAL FROM DRAINAGE GRATES, TRASH ROCKS, AND DITCH LINES SHOULD BE A PRIORITY.
TRASH RECEPTACLES SHOULD BE PROVIDED IN THE CONTRACTOR'S YARD, FIELD TRAILER AREAS, AND AT LOCATIONS WHERE WORKERS CONGREGATE FOR LUNCH AND BREAK PERIODS.
LITTER FROM WORK AREAS WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT SITE SHOULD BE COLLECTED AND PLACED IN WATERTIGHT DUMPSTERS AT LEAST WEEKLY, REGARDLESS OF WHETHER THE LITTER WAS GENERATED BY THE CONTRACTOR, THE PUBLIC, OR OTHERS. COLLECTED LITTER AND DEBRIS SHOULD NOT BE PLACED IN OR NEXT TO DRAIN INLETS, STORMWATER DRAINAGE SYSTEMS, OR WATERCOURSES.
DUMPSTERS OF SUFFICIENT SIZE AND NUMBER SHOULD BE PROVIDED TO CONTAIN THE SOLID WASTE GENERATED BY THE PROJECT.
FULL DUMPSTERS SHOULD BE REMOVED FROM THE PROJECT SITE AND THE CONTENTS SHOULD BE DISPOSED OF BY THE TRASH HAULING CONTRACTOR.
CONSTRUCTION DEBRIS AND WASTE SHOULD BE REMOVED FROM THE SITE BIWEEKLY OR MORE FREQUENTLY AS NEEDED.
CONSTRUCTION MATERIAL VISIBLE TO THE PUBLIC SHOULD BE STORED OR STOCKED IN AN ORDERLY MANNER.
STORMWATER RUNON SHOULD BE PREVENTED FROM CONTACTING STORED SOLID WASTE THROUGH THE USE OF BERMS, DIKES, OR OTHER TEMPORARY DIVERSION STRUCTURES OR THROUGH THE USE OF MEASURES TO ELEVATE WASTE FROM SITE SURFACES.
SOLID WASTE STORAGE AREAS SHOULD BE LOCATED AT LEAST 50 FT. FROM DRAINAGE FACILITIES AND WATER COURSES AND SHOULD NOT BE LOCATED IN AREAS PRONE TO FLOODING OR PONDING.

INSPECTION AND MAINTENANCE

INSPECT AND VERIFY THAT ACTIVITY-BASED BMP'S ARE IN PLACE PRIOR TO THE COMMENCEMENT OF ASSOCIATED ACTIVITIES. WHILE ACTIVITIES ASSOCIATED WITH THE BMP ARE UNDER WAY, INSPECT WEEKLY TO VERIFY CONTINUED BMP IMPLEMENTATION.
INSPECT BMP'S SUBJECT TO NON-STORMWATER DISCHARGE DAILY WHILE NON-STORMWATER DISCHARGES OCCUR.
INSPECT CONSTRUCTION WASTE AREA REGULARLY.
ARRANGE FOR REGULAR WASTE COLLECTION.

EVALUATION FOR CONSTRUCTION PROJECTS

A trained individual shall perform a written evaluation of the project site.

a By the end of the next business day following each rainfall that exceeds 0.5"
b A minimum of one (1) time per week

Project Name: ______________________________

Name of Trained Individual: ____________________ Date of Inspection: __________

Is this Evaluation following a rainfall ____ Yes ____ No If yes – date the rain stopped: ________ Inches: ______

NO	PROBLEM or CONCERN	YES	NO	N/A
1	Is the site information posted at the entrance?			
2	Are all necessary permits attained and special provisions being implemented?			
3	Is a construction entrance installed? Is it effective? Is it enough			
4	Public and private streets are clean?			
5	Are appropriate practices installed where stormwater leaves the site?			
6	Silt fence is entrenched into the ground?			
7	Silt fence is upright? Fabric and stakes meet specifications? Fabric is not to torn?			
	Terminated to higher ground? Property joined at ends?			
8	Sediment basins and traps are installed according to the plan? The pipe or rock spillway is functional?			
9	The earthwork for erosion and sediment control practices is properly graded, seeded, and/or mulched?			
10	Diversion swales and/or waterbars are installed to plan and protected?			
11	Perimeter practices have adequate capacity and do not need to be cleaned out?			
12	Inlet protection is installed on all functional inlets? (not filter fabric under grate)			
13	Inlet protection is installed so water does not flow under it?			
14	The frame, cross-bracing, and/or stakes are adequate and meet specifications?			
15	The fabric, straw, mulch, and/or stone is intact without holes or tears?			
16	Catch basin insert protection is installed where required?			
17	Sediment has been removed from the practice?			
18	Swales and ditches have been stabilized or protected?			
19	Stormwater outlets are adequately stabilized?			
20	Temporary Stabilization of distributed ground has been addressed?			
21	Disturbed areas that will lie dormant for 15 days are planned to be protected?			
22	All protected dormant areas meet a minimum 70% coverage			
23	Growing vegetation has sufficient water and/or nutrients to grow?			
24	Permanent stabilization of disturbed ground is progressing through the project?			
25	Final grading and stabilization is progressing on completed areas?			
26	The soil has been properly prepared for seeding?			
27	Hard or soft armoring is installed where natural vegetation will erode?			
28	Water pumping operations have a protected outlet and discharge water is clear?			
29	A designated washout is established for concrete trucks?			
30	A dumpster is on-site for trash disposal?			
31	Fuel tanks and other toxic materials are safely stored and protected?			
32	Smaller construction sites not required to file a separate NOI are complying with the overall plan?			
33				
34				

ALL PROBLEMS OR CONCERNS NEED TO BE ADDRESSED WITH A CORRECTIVE ACTION

Identify the problem by number and/or provide additional explanation as needed.

Developer/Owner Representative contacted – name: ______________________ date: __________

Contractor Representative contacted – name: ______________________ date: __________

Report Submitted by: ______________________ date: __________

DANDY DEWATERING BAG

DETAIL OF A DEWATERING BAG

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Carmel, Indiana 46033
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www.Fritz-Eng.com

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

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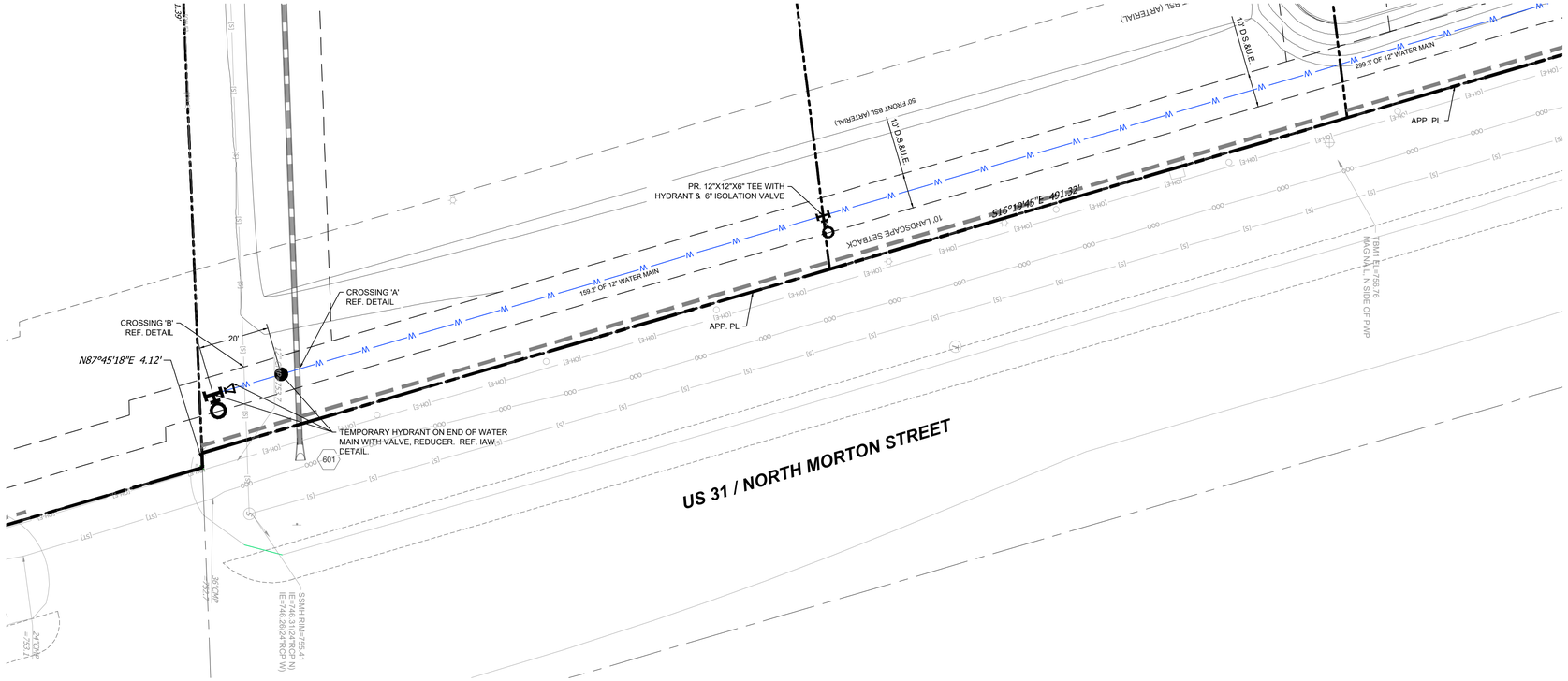
PROJECT:
BDH REALTY CAR WASH

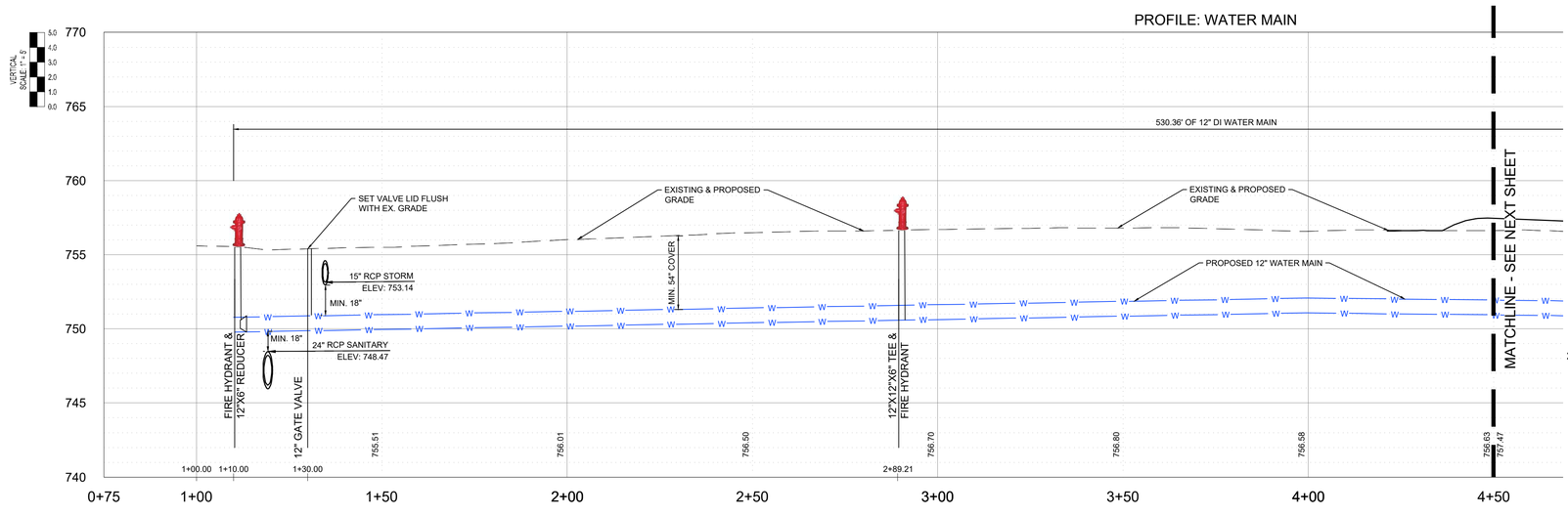
PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY

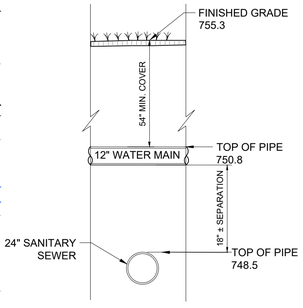
SECTION, TOWNSHIP, RANGE:
NE $\frac{1}{4}$, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

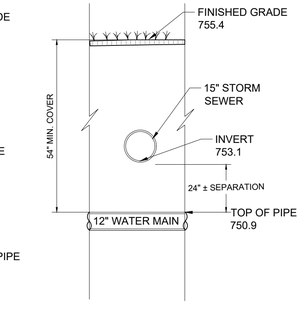
PLAN DATE: 3/26/2021
DESIGN: AF
CHECK: AF
DRAWN: KG
PROJECT NO. 2006003
SHEET NAME: **SWPPP SPECIFICATIONS**
SHEET NO. **C505**







WATER MAIN CROSSING 'B'
NOT TO SCALE



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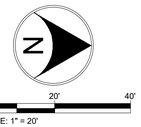
NOT TO SCALE



LEGEND:

- FINISHED GRADE
- EXISTING GRADE
- GRANULAR BACKFILL
- STORM STRUCTURE ID (SXX)

WATER UTILITY INSTALLATION NOTES

1. Installation of water main, fittings, valves, fire hydrants, and appurtenances shall be in accordance with Indiana American Water Standards and Specifications, latest revision.
2. It is the contractor's responsibility to field verify the location, size and material of the existing water main prior to construction.
3. For PVC C900 pipe installation: DR14 pipe is required. Deflection of pipe joints and bending of pipes are not permitted. All angles shall be made with proper fittings. When restraint of pipe-to-pipe joints are required, all joints shall be restrained with external split serrated restraint harnesses. Select fill material required for bedding and embedment regardless of pipe's proximity to pavement.
4. Encase all ductile iron piping, ductile iron fittings, valves, hydrants, and all other metallic appurtenances in 12mil polyethylene.
5. All fire hydrant laterals shall be ductile iron pipe.
6. All MJ T-bolts and flange bolts shall have Xylan or FluoroKote #1 corrosion resistant coating.
7. All fittings shall be restrained using MJ retainer glands or poured concrete thrust blocks.
8. Copper-clad steel tracer wire required on installation of all pipe. Tracer wire shall be taped to pipe or polyethylene encasement at a minimum spacing of 10-feet. Splices shall be encased in waterproof connectors. Continuity shall be tested after completion of backfill.
9. Select fill material required for final backfill when within 5-feet of pavement per specification section 02210.
10. Maintain the required 10-feet of horizontal separation and 18-inches of vertical separation from sanitary and storm sewers. Maintain 8-feet of horizontal separation from sanitary and storm structures. See 327 IAC 8-3.2-9 of the Indiana Administrative Code for more information.
11. Maintain minimum cover depth of 54" and a maximum of 78". Per 327 IAC 8-3.2-17(d).

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ASHTON PRELIMINARY NOT FOR CONSTRUCTION PROFESSIONAL ENGINEER STATE OF INDIANA

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

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PROJECT:
BDH REALTY CAR WASH
PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

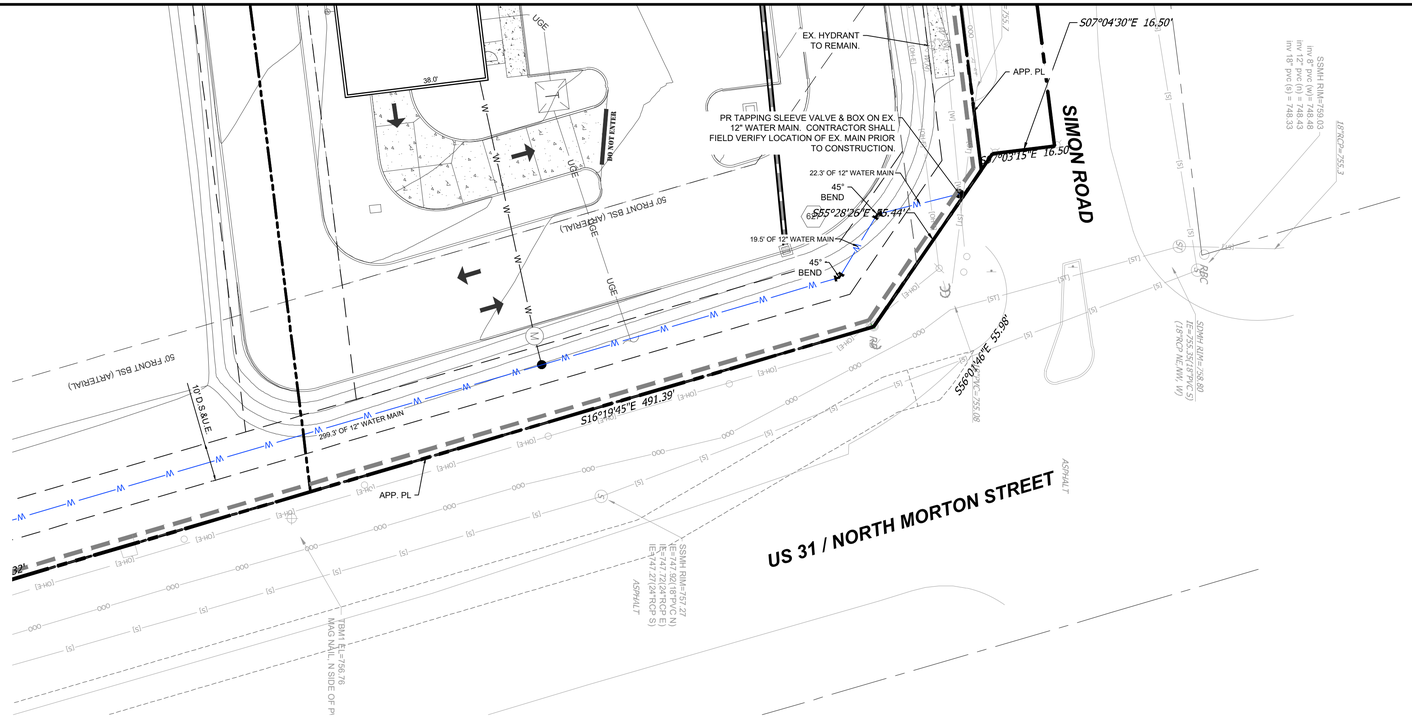
PLAN DATE: 3/26/2021

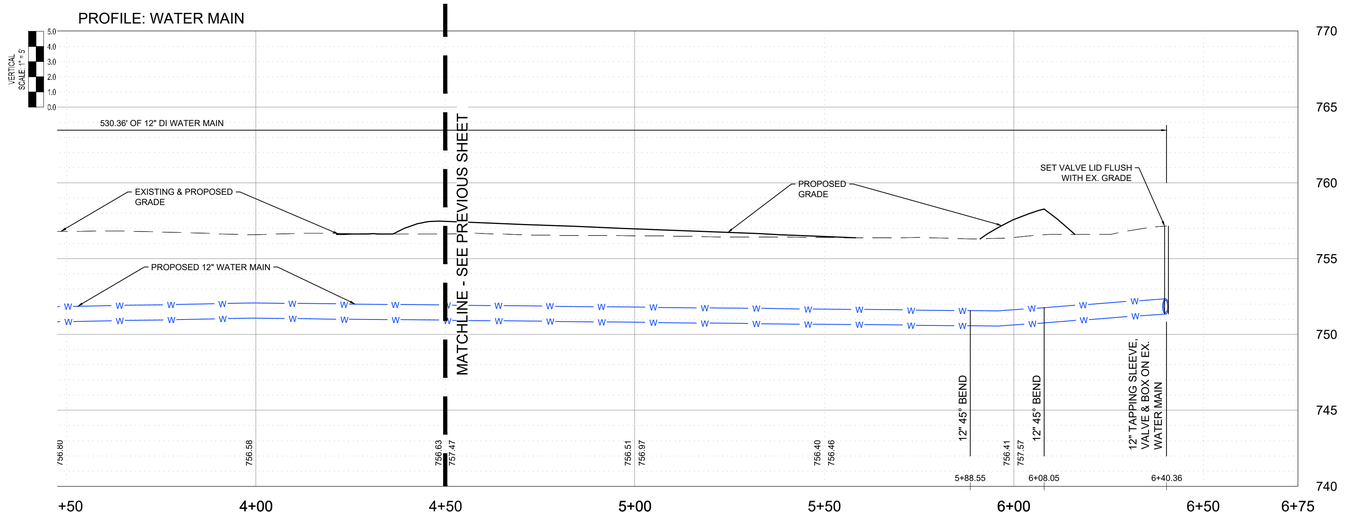
DESIGN:	CHECK:	DRAWN:
AF	AF	KG

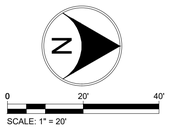
PROJECT NO. 2006003

SHEET NAME
WATER MAIN PLAN & PROFILE

SHEET NO.
C701







LEGEND:

- FINISHED GRADE
- EXISTING GRADE
- GRANULAR BACKFILL
- STORM STRUCTURE ID (XXX)

WATER UTILITY INSTALLATION NOTES

1. Installation of water main, fittings, valves, fire hydrants, and appurtenances shall be in accordance with Indiana American Water Standards and Specifications, latest revision.
2. It is the contractor's responsibility to field verify the location, size and material of the existing water main prior to construction.
3. For PVC C900 pipe installation: DR14 pipe is required. Deflection of pipe joints and bending of pipes are not permitted. All angles shall be made with proper fittings. When restraint of pipe-to-pipe joints are required, all joints shall be restrained with external split serrated restraint harnesses. Select fill material required for bedding and embedment regardless of pipe's proximity to pavement.
4. Encase all ductile iron piping, ductile iron fittings, valves, hydrants, and all other metallic appurtenances in 12mil polyethylene.
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7. All fittings shall be restrained using MJ retainer glands or poured concrete thrust blocks.
8. Copper-clad steel tracer wire required on installation of all pipe. Tracer wire shall be taped to pipe or polyethylene encasement at a minimum spacing of 10-feet. Splices shall be encased in waterproof connectors. Continuity shall be tested after completion of backfill.
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11. Maintain minimum cover depth of 54" and a maximum of 78". Per 327 IAC 8-3.2-17(d).

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SHEET 1 OF 2
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PROFESSIONAL ENGINEER
STATE OF INDIANA

REVISIONS AND ISSUES	DATE	BY

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JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
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8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003
SHEET NAME
WATER MAIN PLAN & PROFILE
SHEET NO.
C702

PAVEMENT

A. SCOPE OF WORK

1. The work required under this section includes all exterior concrete and bituminous paving and related items necessary to complete the work indicated on drawings and described in the specifications, including but not limited to:

   - All drives, parking areas within contract limits
   - Curbs and gutters
   - Sidewalks, concrete slabs, exterior steps

B. MATERIALS

1. Concrete: Concrete shall be ready-mixed and shall be a mix of proportioned fine and coarse aggregates with Portland cement and water. Minimum cement content shall be 6 bags per cubic yard of concrete and maximum water content shall be 5.5 U.S. gallons per sack of cement, including moisture in the aggregate. Slump for normal weight concrete shall be a maximum of 4 inches and a minimum of 2 inches. The slump of machine placed concrete shall be no less than 1-1/4 inches or more than 3 inches. Standard test ASTM C-143 shall be used to measure slump. Minimum compressive strength of concrete at 28 days shall be 4000 psi. All exterior concrete shall have air entrainment of 5% to 8% by volume per ASTM C-260. Re-tempering of delivered concrete shall not be permitted. Concrete shall be composed of:

   a. Portland cement: conforming to ASTM C-150, Type IA or type IIIA.
   b. Aggregates: conforming to ASTM C-33.
   c. Water: Shall be clear and free from injurious amounts of oils, acids, alkalics organic materials or other deleterious substances.

2. Pre-molded Joint Filler: Shall be non-extruding type meeting ASTM D-544, except that pre-molded joint filler used in concrete walk construction may be either non-extruding or resilient.

3. Bituminous Pavement Materials: All materials proposed for the construction of bituminous pavements shall comply with the Indiana Department of Transportation Standard Specifications, latest revisions.

4. Compacted Aggregate Sub-base:

   - If a certain type of aggregate is specified and labeled per the plans and/or details, than that aggregate shall meet and be in accordance with the INDOT Standard Specifications.
   - If the aggregate is not specified or labeled than it shall be crushed stone or gravel meeting the following requirements. Crushed gravel shall be a minimum of 35% crushed material. Fines shall be limited to a maximum of 8% of the total. Material shall be free from an excess of flat, elongated, thinly laminated soft or disintegrated pieces, and shall be free from fragments coated with dirt. Compacted aggregate shall have a gradation as presented below.

SIEVE SIZE	% PASSING
1-1/2"	100
1"	80-100
3/4"	70-90
1/2"	55-80
#4	35-60
#8	25-50
#30	2-30
#200	5-10

C. APPLICATION

1. Grading: Do any necessary grading in addition to that performed in accordance with EARTHWORK Section, to bring sub-grades, after final compaction, to the required grades and sections for site improvement.

2. Preparation of Sub-grade: Remove spongy and otherwise unsuitable material and replace with stable material. No traffic shall be allowed on prepared sub-grade prior to paving.

3. Compaction of Sub-grade: Refer to Section 207 of the INDOT Standard Specification Manual.

4. Utility Structures: Check for correct elevation of all manhole covers, inlets, valve boxes and similar structures located within areas to be paved and mark, or have made any necessary adjustments to such structures.

5. Placing Concrete:

   a. Sub-grade: Place concrete only on a moist, compacted sub-grade of base free from loose material. No concrete shall be placed on a muddy or frozen subgrade.
   b. Forms: All forms shall be free from warp, tight enough to prevent leakage and substantial enough to maintain their shape and position without springing or settling when concrete is placed. Forms shall be clean and smooth immediately before concreting.
   c. Placing Concrete: Concrete shall be deposited so as to require as little handling as practicable. When concrete is to be placed at an atmospheric temperature of 35 degrees (F) or less, the Indiana Department of Transportation Standard Specifications, latest revision shall be followed.

6. Concrete Curb and Gutter:

   a. Expansion Joints: Shall be 1/2 inch thick pre-moulded at ends of all returns and a maximum spacing of 100 feet.
   b. Contraction Joints: Unless otherwise provided, contraction joints shall be joints spaced 10 feet on center.
   c. Finish: Tamp and spread concrete as soon as placed, and fill any honeycombed places. Finish square corners to 1/4 inch radius or as otherwise required.

7. Concrete Walks and Exterior Steps:

   a. Slopes: Provide 1/4 inch per foot cross slope. Contractor shall make field adjustments in slopes at walk intersections as necessary to provide proper drainage.
   b. Dimensions: Walks and steps shall be one course construction and of widths and thickness shown on the drawings.
   c. Finish: Spread concrete and trowel with a steel trowel to a hard dense surface after surface water has disappeared. Apply medium broom finish and scribe control joints at 6 foot spacing. Provide 1/2 inch expansion joints where sidewalks intersect and at a maximum spacing of 48 feet along walks.

8. Curing Concrete: Except as otherwise specified, cure all concrete by one of the methods described in the Indiana Department of Transportation Standard Specifications, latest revision.

9. Bituminous Pavement: Hot asphalt concrete pavement shall be as specified in the Indiana Department of Transportation Standard Specifications, latest revisions. Paving will not be permitted during unfavorable weather or when the temperature is 40 degrees (F) or below and falling.

10. Compacted Aggregate Sub-base: The thickness shown on the drawings is the minimum thickness of the fully compacted sub-base: Compaction shall be accomplished by rolling with a smooth wheeled roller weighing 8 to 10 tons. Compact to 95% compaction using Standard Testing Procedures. Along curbs, headers and walls and at all places not accessible to the roller, the aggregate material shall be tamped with mechanical tampers.

EARTHWORK

A. SCOPE OF WORK

1. Extent: The work required under this section consists of all excavating, filling, rough grading and related items necessary to complete the work indicated on the drawings and described in the specifications. The Contractor shall notify in writing the Owners and the Engineer of any changes, errors, or omissions found on the plans or in the field, before work is started or resumed.

   a. In general, the items of work to be performed under this section shall include clearing and grubbing, removal of trees and stumps (where required), protection of trees to remain, stripping and storage of topsoil, fill, compaction and rough grading of entire site as indicated on the drawings.
   b. Excavated material that is suitable may be used for fill. All unsuitable material and all surplus excavated material not required shall be removed from the site by the Contractor. The location of dump and length of haul shall be the Contractor's responsibility.
   c. Provide and place any additional fill material from off the site as may be necessary to produce the grades required. Fill obtained from offsite shall be of kind and quality as specified herein, and as approved by the Engineer & Owner.

2. The Contractor shall accept the site as he finds it and shall remove all trash, rubbish and debris from the site prior to starting excavation.

3. Work not included: The following items of related work are specified and included in other sections of these specifications.

   a. Excavation, grading and backfilling for utility lines.
   b. Storm drainage systems.
   c. Sanitary sewer systems.
   d. Water supply systems.
   e. Drives and paving.

B. BENCHMARKS

1. Maintain carefully all bench marks, monuments and other reference points. If disturbed or destroyed, replace as directed by the Engineer.

C. REMOVAL OF TREES

1. Remove all trees and stumps from area to be occupied by road and surfaced areas. Removal of trees outside these areas shall only be done as noted on drawings or approved by the Owner.

2. All brush, stumps, wood and other refuse from the trees shall be removed from the site or burned with proper permits (where applicable).

D. PROTECTION OF TREES

1. General Protection: the Contractor shall be responsible for the protection of tops, trunks and roots of existing trees on the project site that are to remain. Existing trees subject to construction damage shall be boxed, fenced or otherwise protected before any work is started; do not stockpile within branch spread. Remove interfering branches without injury to trunks and cover scars with tree paint.

E. STRIPPING OF TOPSOIL

1. Remove topsoil to a depth of 6 inches (or as indicated by Owner's Geotechnical Engineer) from the areas to be occupied by roads, walks, buildings, and parking areas. Pile and store topsoil at a location where it will not interfere with construction operations. Top soil shall be reasonably free from subsoil, debris and stones larger than 2 inches.

F. DISPOSITION OF UTILITIES

1. Rules and regulations governing the respective utilities shall be observed in executing all work under this section.

2. It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall be the contractor's responsibility to contact the owners of the various utilities before work is started. The contractor shall notify in writing the owners or the engineers of any changes, errors or omissions found on these plans, and/or in the field before work is started or resumes.

3. Where active utilities are encountered but not shown on the drawings, the Contractor shall notify the Utility Company, Owner and Engineer prior to proceeding with any work. An appropriate course of action shall be agreed upon by the Utility Company, Owner and Engineer prior to work commencing.

4. Inactive and abandoned utilities encountered in excavating and grading operations shall be reported to the Engineer. They shall be removed, plugged or capped as directed by the Engineer and/or Utility Company.

G. SITE GRADING

1. Grades: Perform all cutting, filling, compacting of fills and rough grading required to bring entire project area to subgrade as shown on the drawings. Undercut open areas 4" for topsoil.

2. Rough grading: the tolerance for paved areas shall not exceed 0.10 feet above established subgrade. All other areas shall not exceed 0.10 feet plus or minus the established grade. Provide roundings at top and bottom of banks and other breaks in grade. All open areas shall be graded a minimum of 0.5% and a maximum of 3H:1V slope.

3. Sub-grade shall be proof rolled with suitable equipment and all spongy and otherwise unsuitable material shall be removed and replaced with suitable material. Contractor shall coordinate the proof roll procedure with the agency having jurisdiction to ensure proper representation is in attendance for the test.

4. Sub-grade for building areas shall be compacted to a minimum compaction of 95% Modified Proctor Density or per the Archetectual/Structural Construction Plans for the corresponding building area. The Archetectual/Structural plans shall govern.

5. Sub-grade for streets and paved areas - See PAVEMENT specifications.

6. See PAVEMENT section for additional information.

7. All fill material shall be formed from soil free of deleterious material. Prior to placement of fill, a sample of the proposed material shall be submitted to the Owner's Geotechnical Engineer for approval. The fill material shall be placed in layers not to exceed 8" in loose thickness and shall be spread and compacted at the proper moisture content.

8. All fill material in areas outside of building and pavement areas shall be compacted lightly with each lift and protected from erosion. Areas of building construction shall have suitable fill material placed and compacted in accordance with the Soils Engineer's report and per sub-section 4 described above in this Section.

9. The Contractor shall verify all earthwork quantities prior to the start of construction. The Contractor shall notify the Owner and Engineer in writing if excess or shortage of earth quantities is encountered and verify requirements for stockpiling, removal or importing earth. Owner and Engineer hereby reserve the right to allow minor adjustments in proposed grades to reduce an earth quantity disparity.

H. SEEDING PREPARATION

1. Contractor shall resolve any surface or subsurface drainage problems and construct permanent erosion control structures.

2. Remove all rocks, roots or other materials that may interfere with seedbed preparation.

3. Perform the major filling, shaping and smoothing of gullied or severely eroded areas.

4. Have soil tested to check pH and fertility levels. Apply lime at rate specified in seeding specifications on the plans.

5. Work all lime and fertilizer into the soil to a depth of 2-3 inches with a small disk, harrow or rake operated across the slope as much as possible.

6. Firm the soil bed where possible. Do not over pack the soil to ensure compacting does not restrict water and root penetration into the soil.

STORM SEWER SYSTEMS

Storm construction procedures, materials, testing, details and specifications shall be in accordance with CITY OF FRANKLIN STORMWATER AND ENGINEERING TECHNICAL AND CONSTRUCTION STANDARDS. Please refer to these standards, specifications, and details for all storm sewer system construction.

WATER & FIRE SUPPRESSION SYSTEMS

Water construction procedures, materials, testing, details and specifications shall be in accordance with INDIANA AMERICAN WATER WATER TECHNICAL & CONSTRUCTION STANDARDS. Please refer to these standards, specifications, and details for all water system construction.

Fire Suppression systems construction procedures, materials, testing, details and specifications shall be in accordance with INDIANA AMERICAN WATER UTILITY AND FRANKLIN FIRE DEPARTMENT TECHNICAL & CONSTRUCTION STANDARDS. Please refer to these standards, specifications, and details for all fire suppression system construction.

DEWATERING AND CONTROL OF SURFACE WATER

Whenever groundwater is encountered, the CONTRACTOR shall make every practical effort to secure a dry trench bottom before laying pipe. The CONTRACTOR shall provide, install and operate sufficient trenches, sumps, pumps, hose, piping, well points, etc. to depress and maintain the groundwater level below the base of the excavation. If the CONTRACTOR is unable to remove the standing water in the trench, the CONTRACTOR shall over-excavate the proposed bottom grade of the sewer bedding, and place not less than three (3) inches of No. 8 crushed stone in the over-excavated area.

The CONTRACTOR shall keep the site free of surface water at all times and shall install drainage ditches, dikes, pumps, and perform other work necessary to divert or remove rainfall and other accumulation of surface water from excavations. The diversion and removal of surface and/or groundwater shall be performed in a manner which will prevent the accumulation of water within the construction area. UNDER NO CIRCUMSTANCES SHALL SURFACE WATER AND/OR GROUNDWATER BE DISCHARGED TO, DISPOSED OF OR ALLOWED TO FLOW INTO AN ACTIVE SANITARY SEWER SYSTEM.

1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL CITY OF FRANKLIN CONSTRUCTION STANDARDS AND SPECIFICATIONS (STANDARDS) UNLESS SPECIFICALLY NOTED OTHERWISE.
2. INDIANA STATE DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, TO BE USED WITH THESE PLANS. (SUPPLEMENTAL SPECIFICATIONS)
3. IN THE EVENT THESE PLANS OR SUPPLEMENTAL SPECIFICATIONS ARE IN CONFLICT WITH SAID STANDARDS, THE MORE STRINGENT REQUIREMENTS SHALL BE USED.

Fritz Engineering Services, LLC
14020 Mississinewa Drive
Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

ASHTON J. FRITZ
PRELIMINARY
NOT FOR CONSTRUCTION
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

"IT'S THE LAW"
811
Know what's below.
Call before you dig.
2 WORKING DAYS BEFORE YOU DIG.

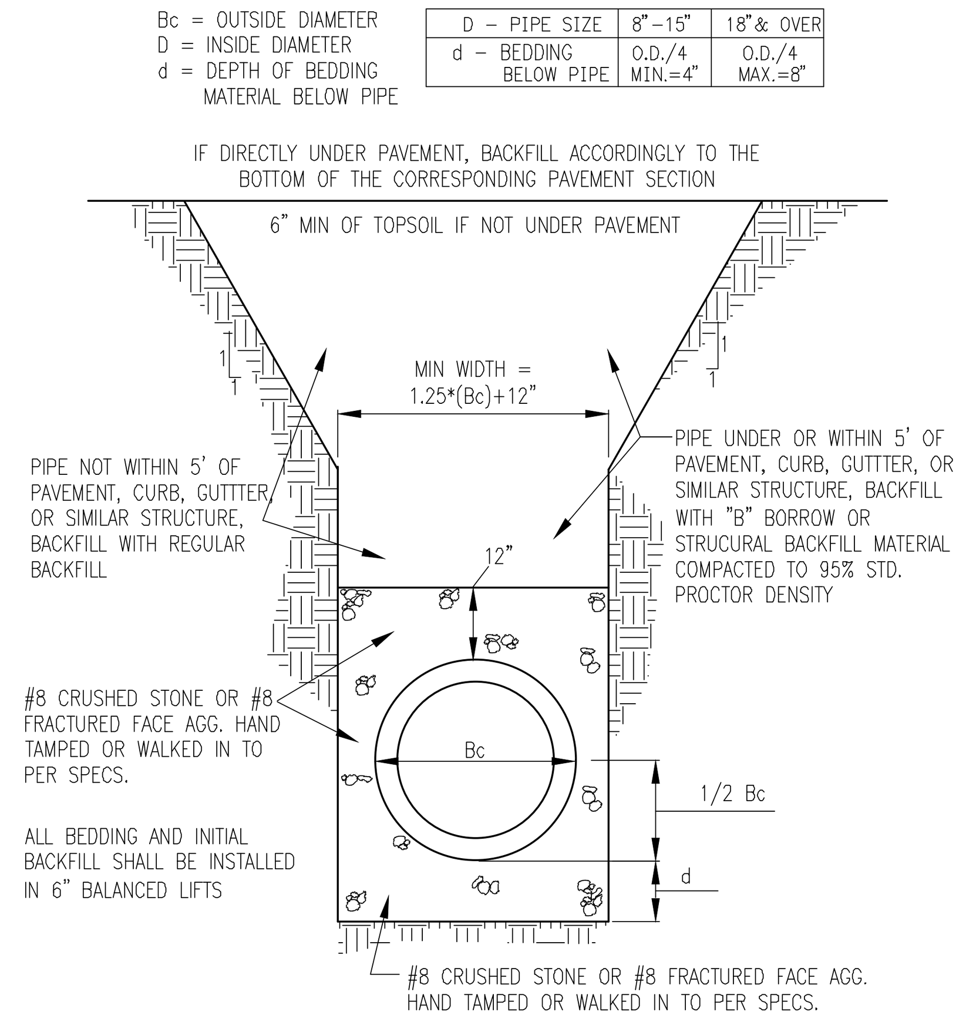
PROJECT:
BDH REALTY CAR WASH
PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
NE 1/4, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

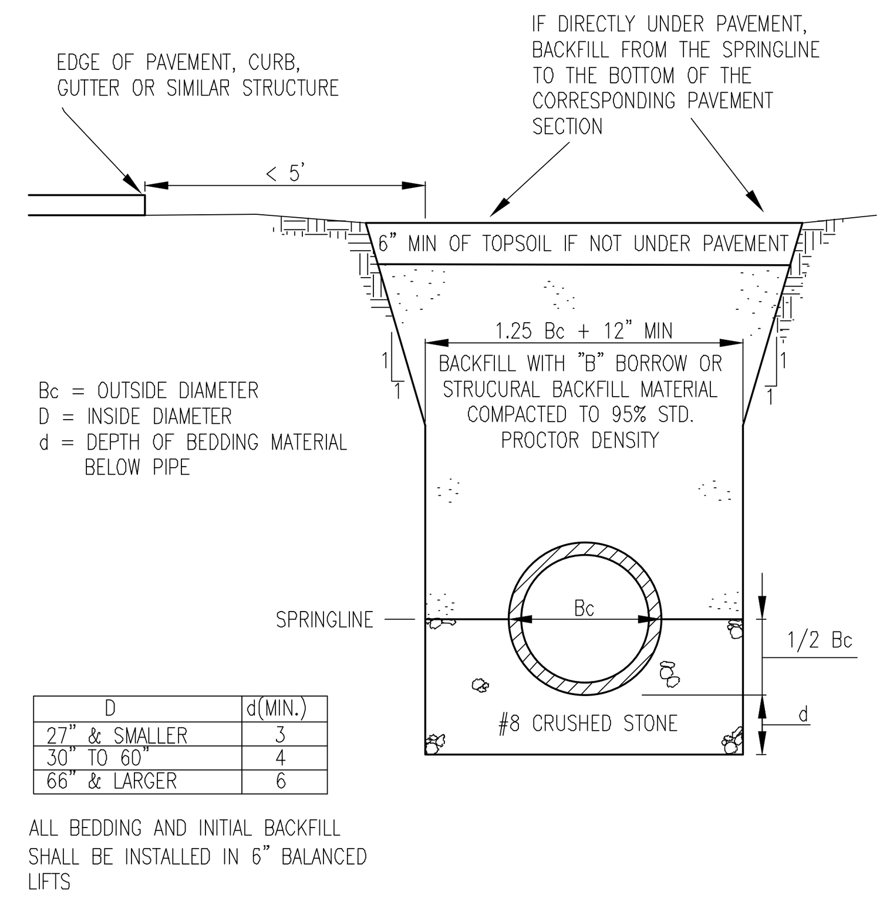
PROJECT NO. 2006003
SHEET NAME
GENERAL DETAILS
SHEET NO.
C801



HDPE BEDDING SECTION DETAIL

ALSO FOR PVC/FLEXIBLE PIPE AND SERVICE LATERALS

NOT TO SCALE

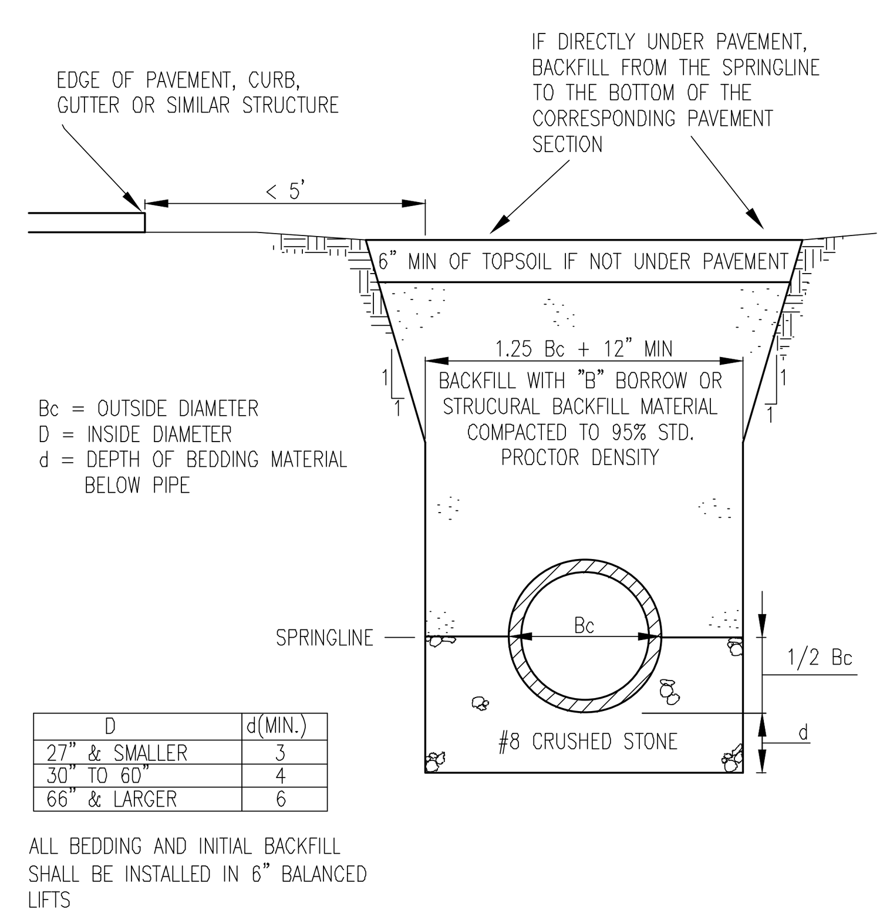


D	d(MIN.)
27" & SMALLER	3
30" TO 60"	4
66" & LARGER	6

ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 6" BALANCED LIFTS

RCP BEDDING SECTION < 5' FROM EDGE OF PAVEMENT

NOT TO SCALE



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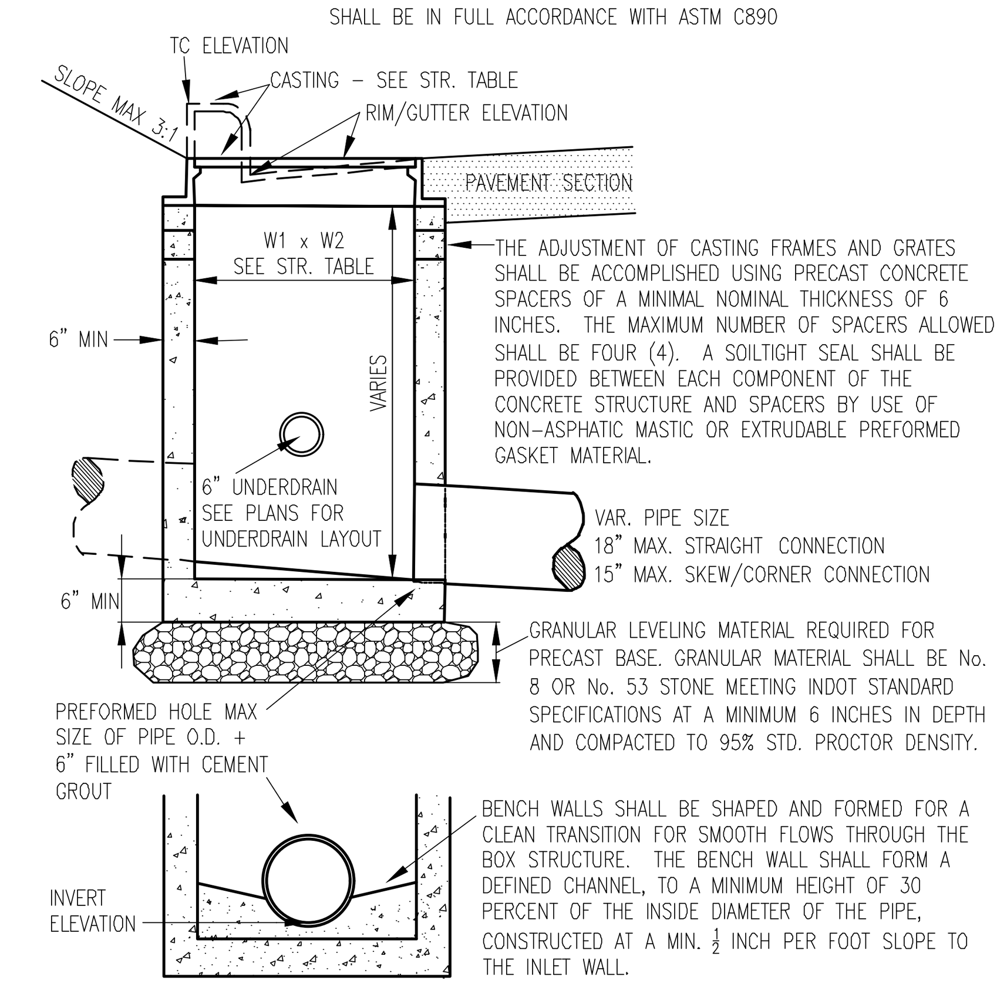
ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 6" BALANCED LIFTS

RCP BEDDING SECTION < 5' FROM EDGE OF PAVEMENT

NOT TO SCALE

GENERAL NOTES:
STORM BOX STRUCTURES SHALL BE PRECAST CONCRETE CLASS A WITH A 4000 PSI. 28 DAY COMPRESSIVE STRENGTH. THE STRUCTURE DESIGN SHALL BE IN FULL ACCORDANCE WITH ASTM C890



THE ADJUSTMENT OF CASTING FRAMES AND GRATES SHALL BE ACCOMPLISHED USING PRECAST CONCRETE SPACERS OF A MINIMAL NOMINAL THICKNESS OF 6 INCHES. THE MAXIMUM NUMBER OF SPACERS ALLOWED SHALL BE FOUR (4). A SOILTIGHT SEAL SHALL BE PROVIDED BETWEEN EACH COMPONENT OF THE CONCRETE STRUCTURE AND SPACERS BY USE OF NON-ASPHATIC MASTIC OR EXTRUDABLE PREFORMED GASKET MATERIAL.

GRANULAR LEVELING MATERIAL REQUIRED FOR PRECAST BASE. GRANULAR MATERIAL SHALL BE No. 8 OR No. 53 STONE MEETING INDOT STANDARD SPECIFICATIONS AT A MINIMUM 6 INCHES IN DEPTH AND COMPACTED TO 95% STD. PROCTOR DENSITY.

BENCH WALLS SHALL BE SHAPED AND FORMED FOR A CLEAN TRANSITION FOR SMOOTH FLOWS THROUGH THE BOX STRUCTURE. THE BENCH WALL SHALL FORM A DEFINED CHANNEL, TO A MINIMUM HEIGHT OF 30 PERCENT OF THE INSIDE DIAMETER OF THE PIPE, CONSTRUCTED AT A MIN. 1/4 INCH PER FOOT SLOPE TO THE INLET WALL.

STORM BOX STRUCTURE

NOT TO SCALE

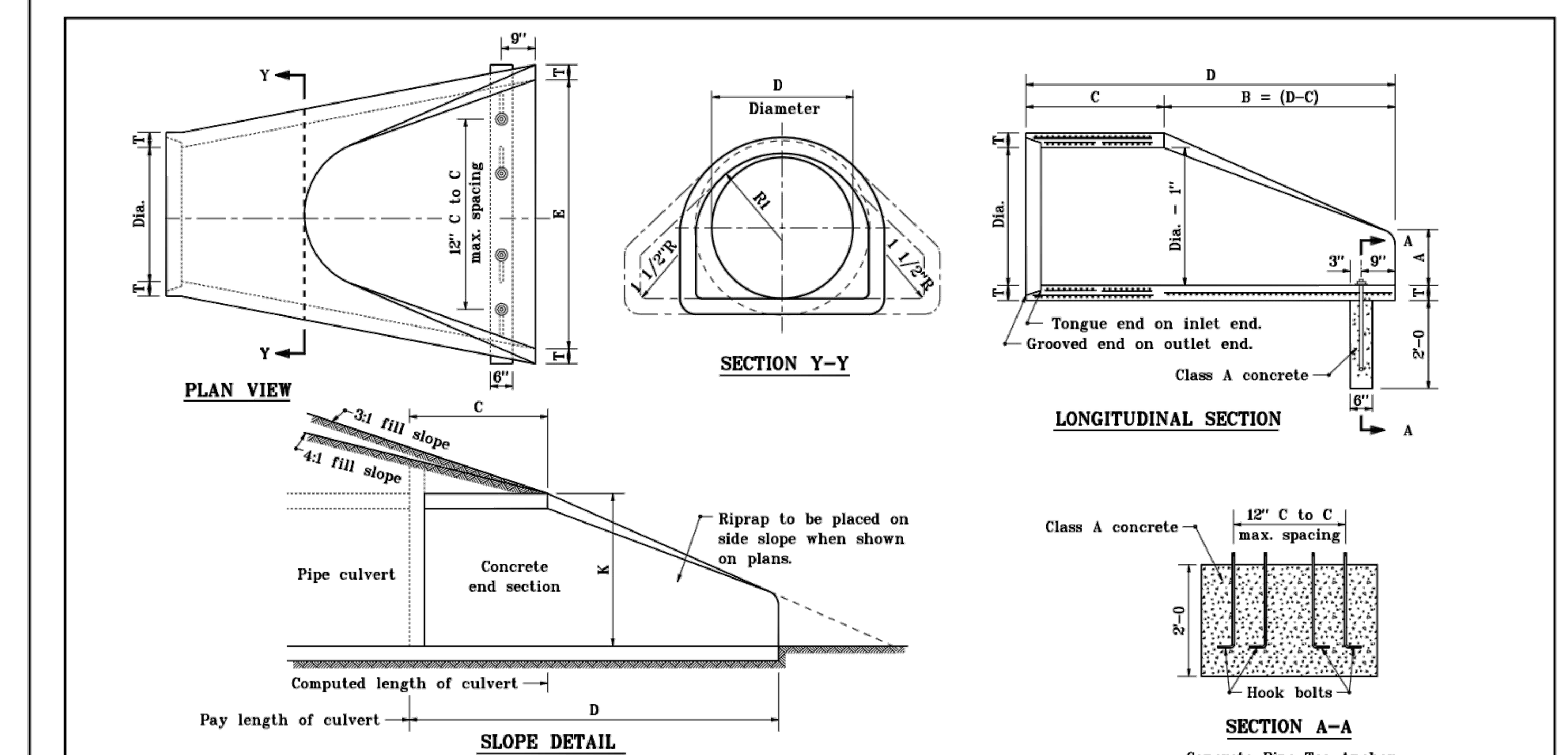


TABLE OF DIMENSIONS									
DIA.	T (min.)	A (±1")	C (±1")	D (±1")	E (±1")	K	R1	R2	APPROX. WEIGHT, lb.
12"	2"	5"	4'–3	6'–2	2'–0	1.3	10 1/8"	9"	800
15"	2 1/4"	7"	4'–0	6'–3	2'–6	1.5	12 1/2"	11"	1100
18"	2 1/2"	11"	4'–1	6'–2	3'–0	1.8	15 1/2"	12"	1300
21"	2 3/4"	11"	3'–6	6'–3	3'–6	2.1	16 1/8"	13"	1500
24"	3"	1'–0	2'–8	6'–3	4'–0	2.3	16 3/16"	14"	1800
27"	3 1/4"	1'–1	2'–5	6'–3	4'–6	2.6	18 9/16"	14 1/2"	2100
30"	3 1/2"	1'–2	1'–10	6'–3	5'–0	2.9	18 1/2"	15"	2400
33"	3 3/4"	1'–3	3'–6	8'–3	5'–6	3.1	23 3/4"	17 1/2"	4100
36"	4"	1'–5	3'–1	8'–3	6'–0	3.4	24 5/16"	20"	4200

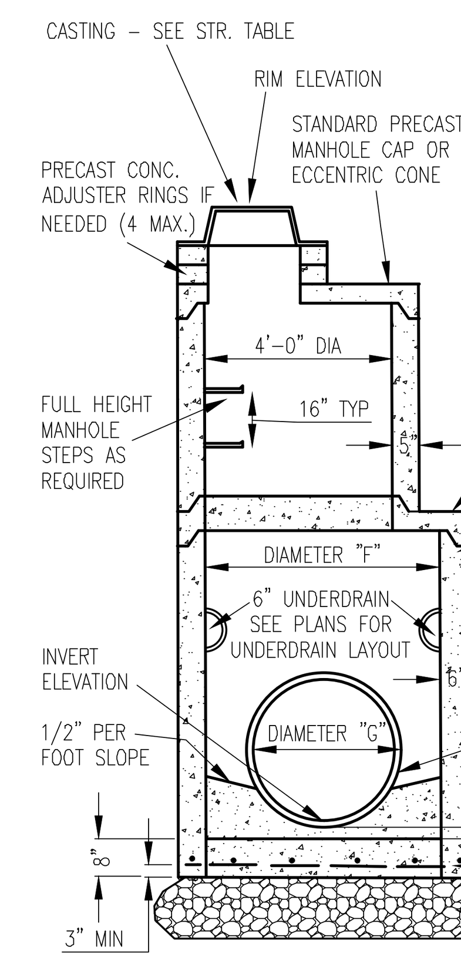
INDIANA DEPARTMENT OF TRANSPORTATION
PRECAST CONCRETE END SECTION
MAY 1998
STANDARD DRAWING NO. E 715–PCES–01

Registered No. 18095 State of Indiana Professional Engineer — DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 11-15-99 — DESIGN STANDARDS ENGINEER — DATE

/s/ Firooz Zandi 11-15-99 — CHIEF HIGHWAY ENGINEER — DATE

ORIGINALLY APPROVED 5-01-98



PIPE SIZE (DIA. "G")	MANHOLE (DIA. "F") PIPES ENTERING/ LEAVING AT 0–45 DEGREES	MANHOLE (DIA. "F") PIPES ENTERING/ LEAVING AT 45–90 DEGREES
12"–21"	48"	48"
24"	48"	60"
27"–30"	60"	60"
33"–36"	60"	72"
42"	72"	84"
48"	72"	96"

JOINTS BETWEEN MANHOLE SECTIONS SHALL BE MADE WITH AN APPROVED RUBBER GASKET IN ACCORDANCE WITH ASTM C–443 OR A 1" DIAMETER NON-ASPHALTIC MASTIC (KENT SEAL OR APPROVED EQUAL) CONFORMING TO AASHTO M–198 AND FEDERAL SPECIFICATIONS SS–S–210A.

PREFORMED HOLE MAX SIZE OF PIPE O.D. + 6" FILLED WITH CEMENT GROUT TO PREVENT LEAKAGE

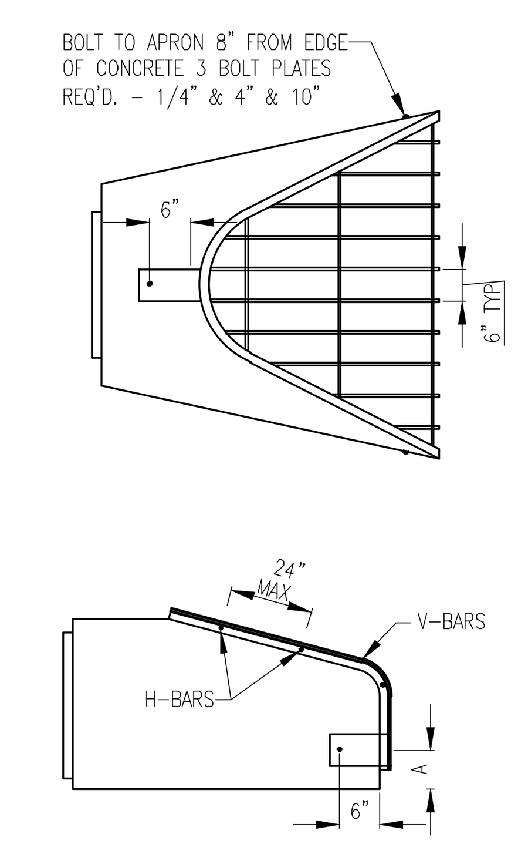
BASE SHALL BE POURED IN PLACE OR PRECAST BOTH SHALL HAVE #4 BARS–12" O.C. BOTH WAYS

GRANULAR LEVELING MATERIAL REQUIRED FOR PRECAST BASE. GRANULAR MATERIAL SHALL BE No. 8 OR No. 53 STONE MEETING INDOT STANDARD SPECIFICATIONS AT A MINIMUM 6 INCHES IN DEPTH AND COMPACTED TO 95% STD. PROCTOR DENSITY.

NOTE:
MANHOLES SHALL BE PRECAST CLASS A CONCRETE CONFORMING TO ASTM C–478

STANDARD STORM MANHOLE

NOT TO SCALE

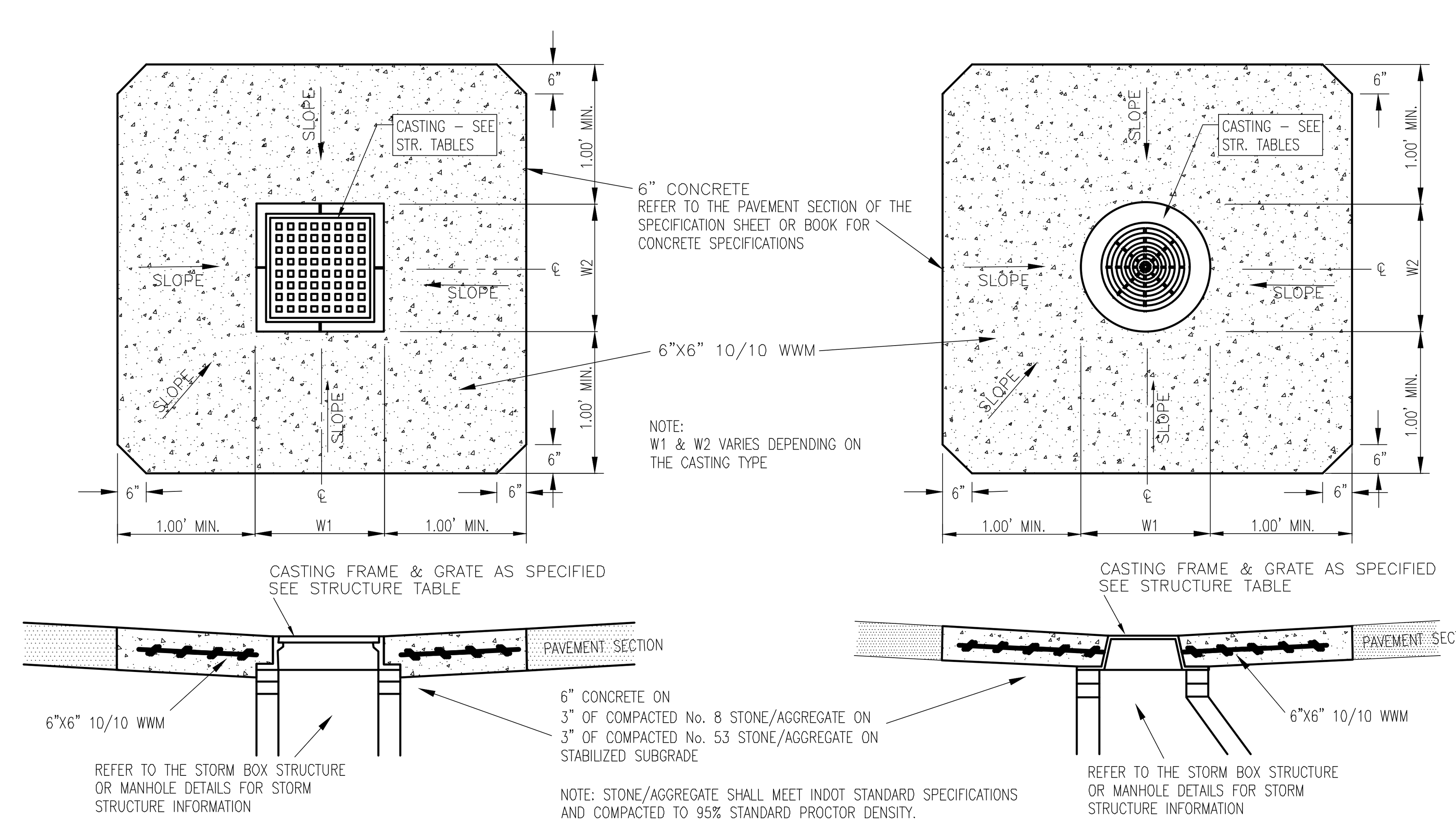


	Apron Size	V-bar Size	H-bar Size	No. of H-bars Req'd.	Bolt Dia.	"A" Dim.
	Inches				Inches	
Arch Pipe Aprons	18	1/2ø	5/8ø	3	1/2	5
	24	5/8ø	3/4ø	4	1/2	7
	30	5/8ø	3/4ø	4	1/2	7 1/2
	36	3/4ø	1ø	4	1/2	10 1/2
	42	3/4ø	1ø	4	3/4	11
	48	3/4ø	1 1/2 Pipe	4	3/4	12
	54	3/4ø	1 1/2 Pipe	5	3/4	12
	60	3/4ø	1 1/2 Pipe	5	3/4	14
	72	3/4ø	1 1/2 Pipe	5	3/4	14
	84	3/4ø	1 1/2 Pipe	6	3/4	15
Round Pipe Aprons	12	1/2ø	5/8ø	3	1/2	4
	15	1/2ø	5/8ø	3	1/2	4 1/2
	18	1/2ø	5/8ø	4	1/2	4 1/2
	21	1/2ø	5/8ø	4	1/2	5
	24	5/8ø	3/4ø	4	1/2	5
	27	5/8ø	3/4ø	4	1/2	5 1/2
	30	5/8ø	3/4ø	4	1/2	5 1/2
	36	3/4ø	1ø	4	3/4	6
	42	3/4ø	1ø	4	3/4	8
	48	3/4ø	1ø	5	3/4	8
	54	3/4ø	1 1/2 Pipe	5	3/4	8
	60	3/4ø	1 1/2 Pipe	5	3/4	8
	66	3/4ø	1 1/2 Pipe	6	3/4	8
	72	3/4ø	1 1/2 Pipe	6	3/4	9
	84	3/4ø	1 1/2 Pipe	7	3/4	10
	90	3/4ø	1 1/2 Pipe	7	3/4	14

NOTES:
1. BARS & PLATES ARE HOT–ROLLED STEEL.
2. BARS, PLATES, & PIPE ARE FINISHED WITH 2 COATS OF ALUMINUM PAINT.
3. BOLTS ARE GALVANIZED.
4. SEE STD. END SECTION DETAILS FOR APRON DIMENSIONS.

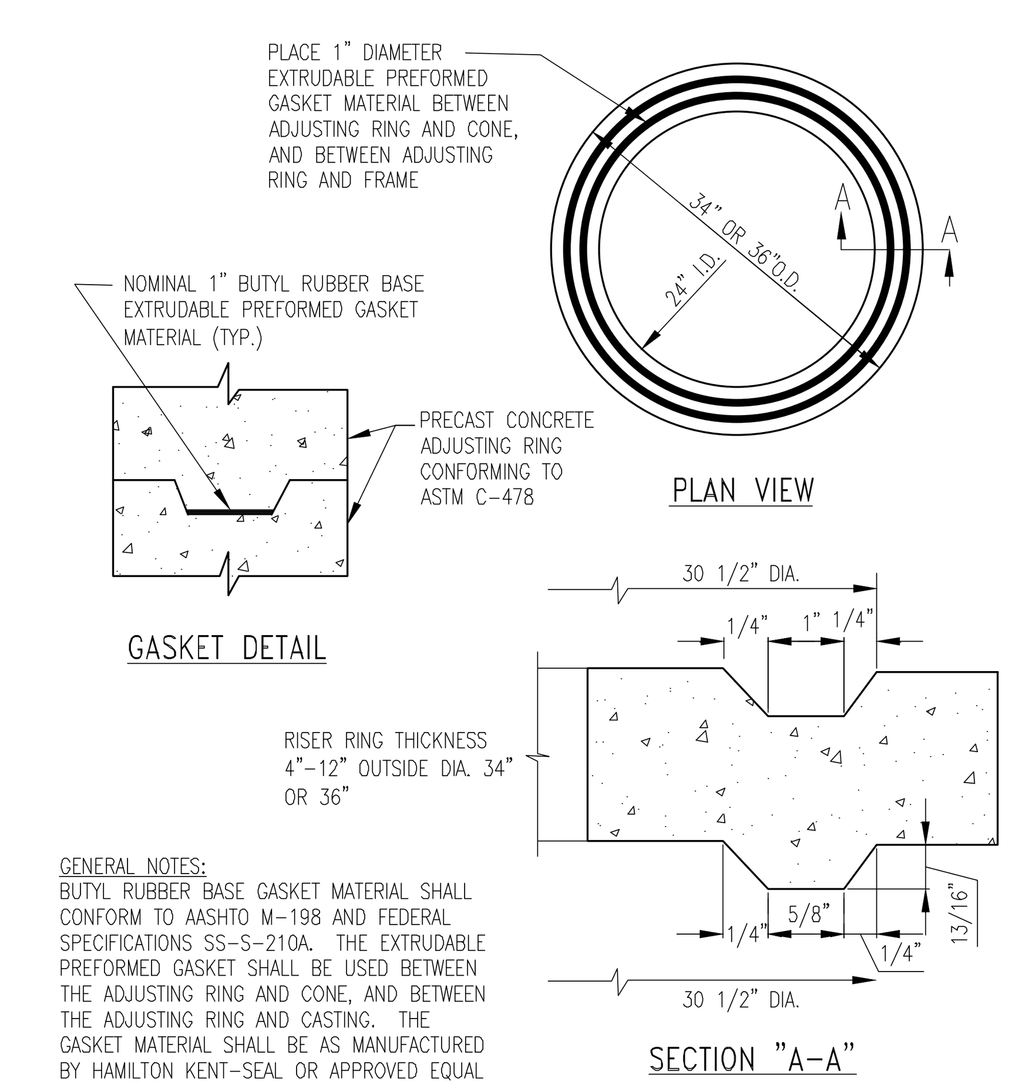
ANIMAL/TRASH GUARDS FOR CONC. END SECTIONS

NOT TO SCALE



STORM STRUCTURE CONCRETE APRON

NOT TO SCALE



GENERAL NOTES:
BUTYL RUBBER BASE GASKET MATERIAL SHALL CONFORM TO AASHTO M–198 AND FEDERAL SPECIFICATIONS SS–S–210A. THE EXTRUDABLE PREFORMED GASKET MATERIAL SHALL BE USED BETWEEN THE ADJUSTING RING AND CONE, AND BETWEEN THE ADJUSTING RING AND CASTING. THE GASKET MATERIAL SHALL BE AS MANUFACTURED BY HAMILTON KENT-SEAL OR APPROVED EQUAL.

ADJUSTING RING DETAIL

NOT TO SCALE

Fritz Engineering Services, LLC
14020 Mississinewa Drive
Carmel, Indiana 46033
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www.Fritz-Eng.com

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REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

"IT'S THE LAW" 811 Know what's below. Call before you dig. 2 WORKING DAYS BEFORE YOU DIG.

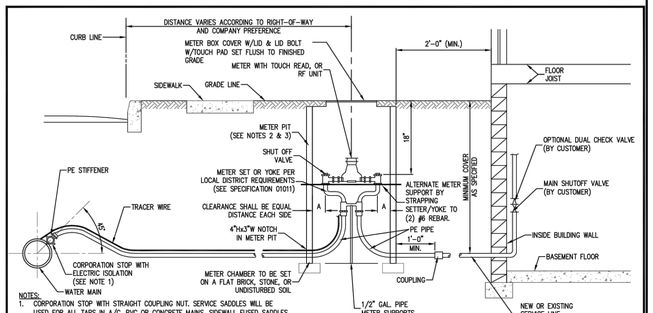
PROJECT:
BDH REALTY CAR WASH

PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE 1/4, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021
DESIGN: JH CHECK: AF DRAWN: KG
PROJECT NO. 2006003
SHEET NAME: STORM SEWER DETAILS
SHEET NO. C802



NOTES:
1. CORPORATION STOP WITH STRAIGHT COUPLING NUT. SERVICE SADDLES WILL BE USED FOR ALL TAPS IN A/C, PVC OR CONCRETE MAINS. SIDEWALL FUSED SADDLES FOR ALL TAPS ON HDPE MAINS.
2. METER PITS PER SPECIFICATION 15200.
3. METER PIT LOCATION TO BE DETERMINED BY LOCAL AUTHORITY AND INAWC.
4. SERVICE LINE AND METER PIT OWNERSHIP VARIES BY LOCAL TARIFF.
5. CONNECTIONS BETWEEN PIPE LENGTHS SHALL BE COMPRESSION OR FLARE AND MAY DEPEND ON LOCAL PLUMBING REQUIREMENT.

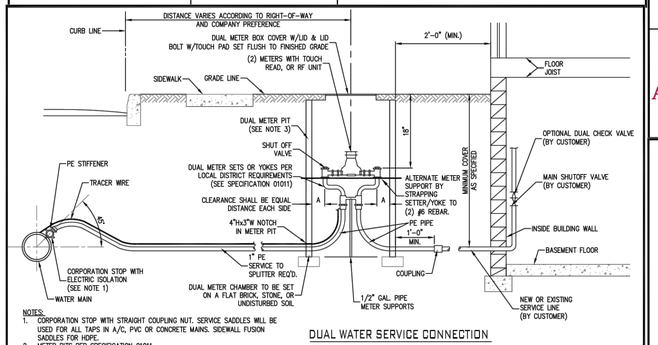
SINGLE WATER SERVICE CONNECTION
N.T.S.

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

SINGLE WATER SERVICE

DATE: JANUARY, 2018	DRAWN BY: S. FORD
LATEST REV: JANUARY, 2018	APP'D BY: E.N.



NOTES:
1. CORPORATION STOP WITH STRAIGHT COUPLING NUT. SERVICE SADDLES WILL BE USED FOR ALL TAPS IN A/C, PVC OR CONCRETE MAINS. SIDEWALL FUSION SADDLES FOR HDPE.
2. METER PITS PER SPECIFICATION 01011.
3. METER PIT LOCATION TO BE DETERMINED BY LOCAL AUTHORITY AND INAWC.
4. SERVICE LINE AND METER PIT OWNERSHIP VARIES BY LOCAL TARIFF.
5. CONNECTIONS BETWEEN PIPE LENGTHS SHALL BE COMPRESSION OR FLARE AND MAY DEPEND ON LOCAL PLUMBING REQUIREMENT.

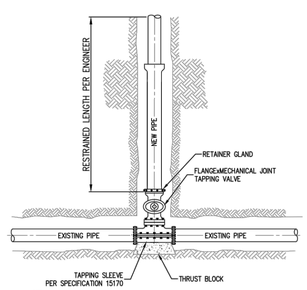
DUAL WATER SERVICE CONNECTION
N.T.S.

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

DUAL WATER SERVICE

DATE: JANUARY, 2018	DRAWN BY: S. FORD
LATEST REV: JANUARY, 2018	APP'D BY: E.N.



NOTE:
1. RETAINER GLAND PER SPECIFICATION 15130.
2. TAPPING SLEEVE FOR HDPE PIPE MUST BE APPROVED FOR THE APPLICATION BY THE MANUFACTURER AND INAWC.

TAPPING SLEEVE AND TAPPING VALVE DETAIL
N.T.S.

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ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

TAPPING SLEEVE AND TAPPING VALVE

DATE: JANUARY, 2018	DRAWN BY: S. FORD
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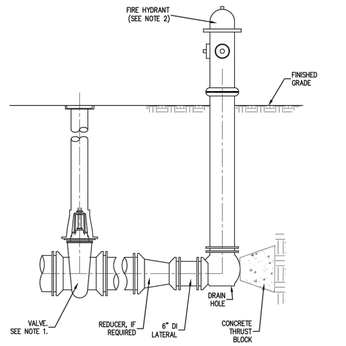

SECTION

NOTE:
1. RESTRAIN VALVE AS A DEAD-END. INSTALL FIRE HYDRANT PER INSTALLATION STANDARD DETAIL. HYDRANT AUXILIARY VALVE NOT REQUIRED.

TEMPORARY DEAD-END FIRE HYDRANT
N.T.S.

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

TEMPORARY DEAD-END FIRE HYDRANT DETAIL

DATE: JANUARY, 2018	DRAWN BY: S. FORD
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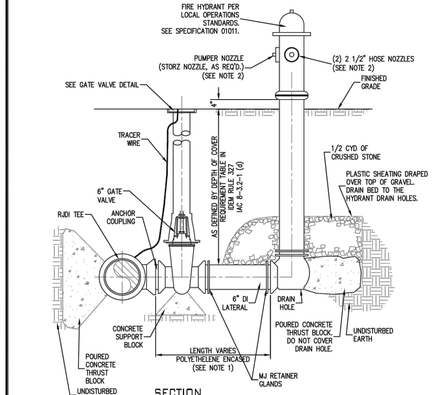

SECTION

NOTE:
1. THE FIRE HYDRANT LATERAL, GATE VALVE, AND FIRE HYDRANT BARREL SHALL BE ENCASED IN POLYETHYLENE ENCASEMENT UP TO FINISHED GRADE PER SPECIFICATION 15130 PRIOR TO BACKFILL. THE POLYETHYLENE ENCASEMENT SHALL NOT INTERFERE WITH THE DRAIN HOLE.
2. WHEN INSTALLED BEHIND CURB, PUMPER AND HOSE NOZZLES TO BE AT LEAST 18"-24", DEPENDING ON LOCAL REQUIREMENTS, FROM FACE OF CURB.

FIRE HYDRANT DETAILS
N.T.S.

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

FIRE HYDRANT DETAIL

DATE: JANUARY, 2018	DRAWN BY: S. FORD
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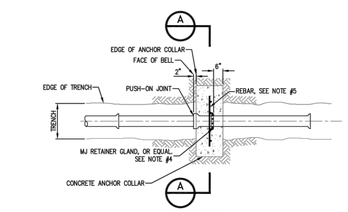


NOTES:
1. CENTER BLOCK ON PIPE.
2. ONE RETAINER GLAND SHALL BE INSTALLED TOWARDS BELL.
3. DO NOT USE RESTRAINED JOINT GASKETS.
4. FOR HDPE PIPE, A WALL ANCHOR IS REQUIRED INSTEAD OF AN MJ RETAINER GLAND.
5. DIMENSION AND REBAR REQUIREMENTS TO BE DETERMINED BY DESIGN ENGINEER.

SECTION A-A ▨ UNDISTURBED SOIL

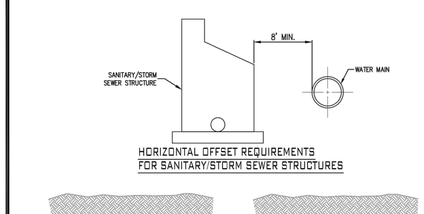
ANCHOR COLLAR DETAIL
N.T.S.

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

ANCHOR COLLAR DETAIL

DATE: JANUARY, 2018	DRAWN BY: S. FORD
LATEST REV: JANUARY, 2018	APP'D BY: E.N.



BASIC SEPARATION REQUIREMENTS:
1. WATER MAINS AND SEWERS SHOULD BE SEPARATED AS FAR AS IS REASONABLE IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS. THE STANDARD DEPTH OF COVER REQUIREMENTS PER COUNTY, AS SPECIFIED IN 327 IAC 8, SHALL BE MAINTAINED FOR ALL WATER MAIN CROSSINGS.
2. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN PRESSURE WATER MAINS AND SEWERS SHALL BE AT LEAST 10 FEET.
3. PERPENDICULAR CONSTRUCTION (CROSSING): PRESSURE WATER MAINS SHALL BE AT LEAST 18" ABOVE SANITARY/STORM SEWERS WHERE THESE LINES MUST CROSS. THE CROSSING MUST BE AT A MINIMUM ANGLE OF 45 DEGREES.

REQUIRED SEPARATION BETWEEN WATER MAINS AND SANITARY/STORM SEWERS & STRUCTURES

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

SEWER SEPARATION

DATE: JANUARY, 2018	DRAWN BY: S. FORD
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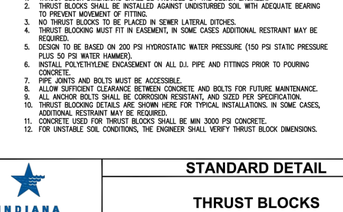


THRUST BLOCK DETAIL
N.T.S.

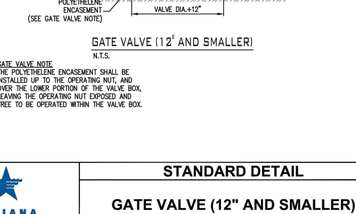
NOTES:
1. THRUST BLOCK DIMENSIONS SHALL BE PROVIDED BY THE DESIGN ENGINEER.
2. THRUST BLOCKS SHALL BE INSTALLED AGAINST UNDISTURBED SOIL WITH ADEQUATE BEARING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES.
4. THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
5. DESIGN TO BE BASED ON 200 PSI HYDROSTATIC WATER PRESSURE (150 PSI STATIC PRESSURE PLUS 50 PSI WATER HAMMER).
6. INSTALL POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS PRIOR TO POURING CONCRETE.
7. PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
8. ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
9. ALL ANCHOR BOLTS SHALL BE CORROSION RESISTANT, AND SIZED PER SPECIFICATION.
10. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
11. CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
12. FOR UNSTABLE SOIL CONDITIONS, THE ENGINEER SHALL VERIFY THRUST BLOCK DIMENSIONS.

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

THRUST BLOCKS

DATE: JANUARY, 2018	DRAWN BY: S. FORD
LATEST REV: JANUARY, 2018	APP'D BY: E.N.



GATE VALVE (12" AND SMALLER)
N.T.S.

GATE VALVE NOTE
THE POLYETHELENE ENCASEMENT SHALL BE INSTALLED UP TO THE OPERATING NUT, AND OVER THE LOWER PORTION OF THE VALVE BOX, LEAVING THE OPERATING NUT EXPOSED AND FREE TO BE OPERATED WITHIN THE VALVE BOX.

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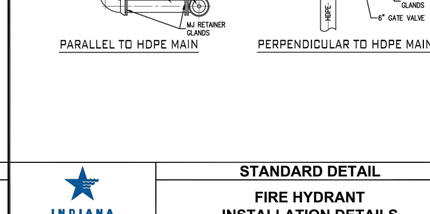
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

GATE VALVE (12" AND SMALLER)

DATE: JANUARY, 2018	DRAWN BY: S. FORD
LATEST REV: JANUARY, 2018	APP'D BY: E.N.



INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL

FIRE HYDRANT INSTALLATION DETAILS

DATE: JANUARY, 2018	DRAWN BY: S. FORD
LATEST REV: JULY, 2018	APP'D BY: E.N.

Fritz Engineering Services, LLC
14020 Mississinewa Drive
Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

PROJECT:
BDH REALTY CAR WASH

PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

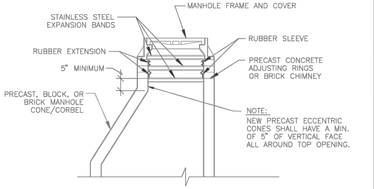
PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
WATER DETAILS

SHEET NO.
C803



TYPICAL CHIMNEY SEAL DETAIL

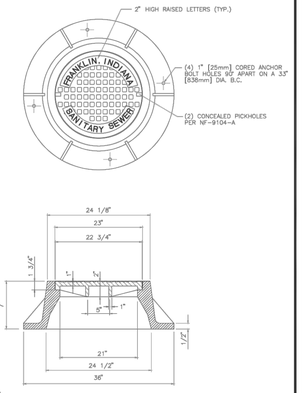
REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 5-10



STANDARD FRAME AND LID

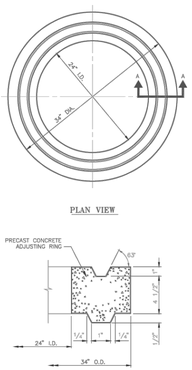
REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 5-8



TYPICAL 1" ADJUSTING RING

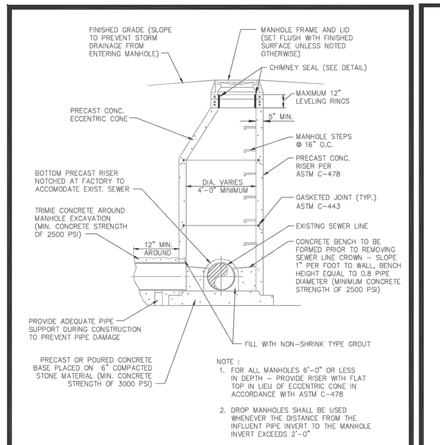
REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 5-7



PRECAST MANHOLE ADDED OVER EXISTING SEWER

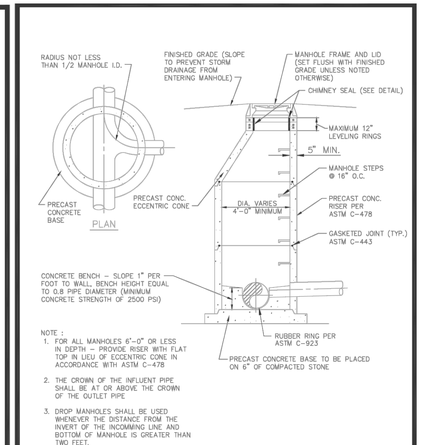
REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 5-2



STANDARD MANHOLE DETAIL

REVISION DATE

CITY of FRANKLIN, INDIANA

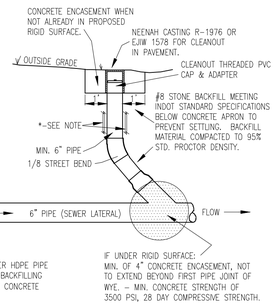
DPW

FIGURE

Illustration 5-1

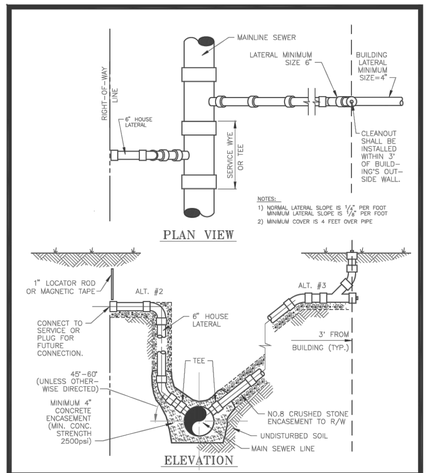
GENERAL NOTES:

- SANITARY LATERAL/CLEANOUT SHALL BE IN ACCORDANCE WITH NOBLESVILLE CONSTRUCTION STANDARDS AND SPECIFICATIONS.
- LATERAL CONNECTION TO CLEANOUT STRUCTURE TO BE WITHIN 3.0' (THREE FEET) OF THE FOUNDATION WALL.
- CLEANOUT & LATERAL MATERIAL SHALL BE PVC SDR–26 PIPE UNLESS SPECIFIED OTHERWISE



TYPICAL SANITARY CLEANOUT, TYPE 1

NOT TO SCALE



SERVICE CONNECTION FOR SHALLOW SEWERS
(ALT.#2 & ALT.#3)
(LESS THAN 15' DEEP)

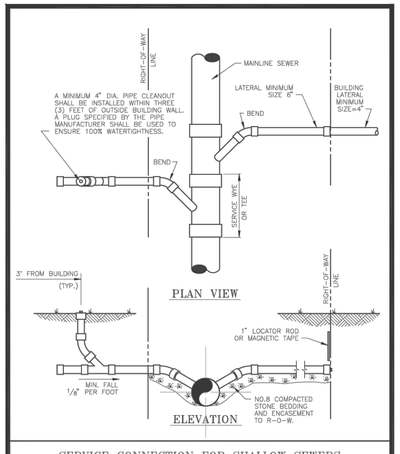
REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 7-6



SERVICE CONNECTION FOR SHALLOW SEWERS
(LESS THAN 15' DEEP)

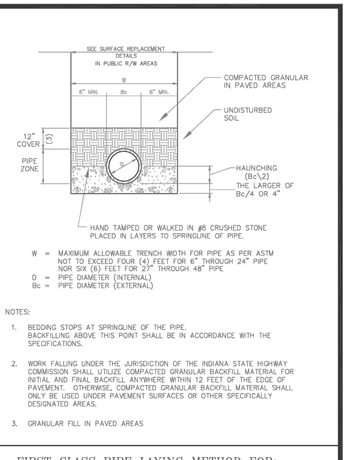
REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 7-4



FIRST CLASS PIPE LAYING METHOD FOR:
RIGID CONDUITS (RCP & CMP)

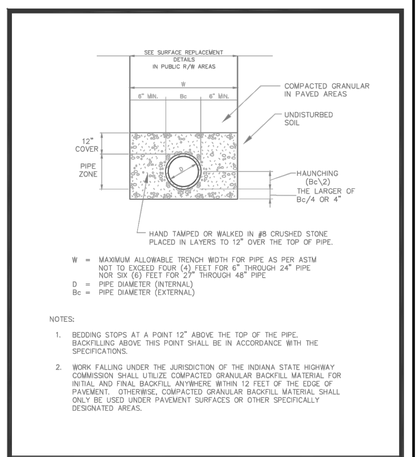
REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 7-2



FIRST CLASS PIPE LAYING METHOD FOR:
1) FLEXIBLE (PVC, RPVC, ABS & HDPE PIPE) AND
2) DUCTILE IRON WITHIN PVM'T LIMITS

REVISION DATE

CITY of FRANKLIN, INDIANA

DPW

FIGURE

Illustration 7-1

Fritz Engineering Services, LLC
14020 Mississinewa Drive
Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

"IT'S THE LAW" 811

Know what's below. Call before you dig.

2 WORKING DAYS BEFORE YOU DIG.

PROJECT:

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JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:

NE ¼, S10, T12N, R4E

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BDH REALTY

8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME

SANITARY DETAILS

SHEET NO.

C804

PAVEMENT

A. SCOPE OF WORK

1. The work required under this section includes all exterior concrete and bituminous paving and related items necessary to complete the work indicated on drawings and described in the specifications, including but not limited to:

   - All drives, parking areas within contract limits
   - Curbs and gutters
   - Sidewalks, concrete slabs, exterior steps

B. MATERIALS

1. Concrete: Concrete shall be ready-mixed and shall be a mix of proportioned fine and coarse aggregates with Portland cement and water. Minimum cement content shall be 6 bags per cubic yard of concrete and maximum water content shall be 5.5 U.S. gallons per sack of cement, including moisture in the aggregate. Slump for normal weight concrete shall be a maximum of 4 inches and a minimum of 2 inches. The slump of machine placed concrete shall be no less than 1-1/4 inches or more than 3 inches. Standard test ASTM C-143 shall be used to measure slump. Minimum compressive strength of concrete at 28 days shall be 4000 psi. All exterior concrete shall have air entrainment of 5% to 8% by volume per ASTM C-260. Re-tempering of delivered concrete shall not be permitted. Concrete shall be composed of:

   a. Portland cement: conforming to ASTM C-150, Type IA or type IIIA.
   b. Aggregates: conforming to ASTM C-33.
   c. Water: Shall be clear and free from injurious amounts of oils, acids, alkalics organic materials or other deleterious substances.

2. Pre-molded Joint Filler: Shall be non-extruding type meeting ASTM D-544, except that pre-molded joint filler used in concrete walk construction may be either non-extruding or resilient.

3. Bituminous Pavement Materials: All materials proposed for the construction of bituminous pavements shall comply with the Indiana Department of Transportation Standard Specifications, latest revisions.

4. Compacted Aggregate Sub-base:

   - If a certain type of aggregate is specified and labeled per the plans and/or details, than that aggregate shall meet and be in accordance with the INDOT Standard Specifications.
   - If the aggregate is not specified or labeled than it shall be crushed stone or gravel meeting the following requirements. Crushed gravel shall be a minimum of 35% crushed material. Fines shall be limited to a maximum of 8% of the total. Material shall be free from an excess of flat, elongated, thinly laminated soft or disintegrated pieces, and shall be free from fragments coated with dirt. Compacted aggregate shall have a gradation as presented below.

SIEVE SIZE	% PASSING
1-1/2"	100
1"	80-100
3/4"	70-90
1/2"	55-80
#4	35-60
#8	25-50
#30	2-30
#200	5-10

C. APPLICATION

1. Grading: Do any necessary grading in addition to that performed in accordance with EARTHWORK Section, to bring sub-grades, after final compaction, to the required grades and sections for site improvement.

2. Preparation of Sub-grade: Remove spongy and otherwise unsuitable material and replace with stable material. No traffic shall be allowed on prepared sub-grade prior to paving.

3. Compaction of Sub-grade: Refer to Section 207 of the INDOT Standard Specification Manual.

4. Utility Structures: Check for correct elevation of all manhole covers, inlets, valve boxes and similar structures located within areas to be paved and mark, or have made any necessary adjustments to such structures.

5. Placing Concrete:

   a. Sub-grade: Place concrete only on a moist, compacted sub-grade of base free from loose material. No concrete shall be placed on a muddy or frozen subgrade.
   b. Forms: All forms shall be free from warp, tight enough to prevent leakage and substantial enough to maintain their shape and position without springing or settling when concrete is placed. Forms shall be clean and smooth immediately before concreting.
   c. Placing Concrete: Concrete shall be deposited so as to require as little handling as practicable. When concrete is to be placed at an atmospheric temperature of 35 degrees (F) or less, the Indiana Department of Transportation Standard Specifications, latest revision shall be followed.

6. Concrete Curb and Gutter:

   a. Expansion Joints: Shall be 1/2 inch thick pre-moulded at ends of all returns and a maximum spacing of 100 feet.
   b. Contraction Joints: Unless otherwise provided, contraction joints shall be joints spaced 10 feet on center.
   c. Finish: Tamp and spread concrete as soon as placed, and fill any honeycombed places. Finish square corners to 1/4 inch radius or as otherwise required.

7. Concrete Walks and Exterior Steps:

   a. Slopes: Provide 1/4 inch per foot cross slope. Contractor shall make field adjustments in slopes at walk intersections as necessary to provide proper drainage.
   b. Dimensions: Walks and steps shall be one course construction and of widths and thickness shown on the drawings.
   c. Finish: Spread concrete and trowel with a steel trowel to a hard dense surface after surface water has disappeared. Apply medium broom finish and scribe control joints at 6 foot spacing. Provide 1/2 inch expansion joints where sidewalks intersect and at a maximum spacing of 48 feet along walks.

8. Curing Concrete: Except as otherwise specified, cure all concrete by one of the methods described in the Indiana Department of Transportation Standard Specifications, latest revision.

9. Bituminous Pavement: Hot asphalt concrete pavement shall be as specified in the Indiana Department of Transportation Standard Specifications, latest revisions. Paving will not be permitted during unfavorable weather or when the temperature is 40 degrees (F) or below and falling.

10. Compacted Aggregate Sub-base: The thickness shown on the drawings is the minimum thickness of the fully compacted sub-base: Compaction shall be accomplished by rolling with a smooth wheeled roller weighing 8 to 10 tons. Compact to 95% compaction using Standard Testing Procedures. Along curbs, headers and walls and at all places not accessible to the roller, the aggregate material shall be tamped with mechanical tampers.

EARTHWORK

A. SCOPE OF WORK

1. Extent: The work required under this section consists of all excavating, filling, rough grading and related items necessary to complete the work indicated on the drawings and described in the specifications. The Contractor shall notify in writing the Owners and the Engineer of any changes, errors, or omissions found on the plans or in the field, before work is started or resumed.

   a. In general, the items of work to be performed under this section shall include clearing and grubbing, removal of trees and stumps (where required), protection of trees to remain, stripping and storage of topsoil, fill, compaction and rough grading of entire site as indicated on the drawings.
   b. Excavated material that is suitable may be used for fill. All unsuitable material and all surplus excavated material not required shall be removed from the site by the Contractor. The location of dump and length of haul shall be the Contractor's responsibility.
   c. Provide and place any additional fill material from off the site as may be necessary to produce the grades required. Fill obtained from offsite shall be of kind and quality as specified herein, and as approved by the Engineer & Owner.

2. The Contractor shall accept the site as he finds it and shall remove all trash, rubbish and debris from the site prior to starting excavation.

3. Work not included: The following items of related work are specified and included in other sections of these specifications.

   a. Excavation, grading and backfilling for utility lines.
   b. Storm drainage systems.
   c. Sanitary sewer systems.
   d. Water supply systems.
   e. Drives and paving.

B. BENCHMARKS

1. Maintain carefully all bench marks, monuments and other reference points. If disturbed or destroyed, replace as directed by the Engineer.

C. REMOVAL OF TREES

1. Remove all trees and stumps from area to be occupied by road and surfaced areas. Removal of trees outside these areas shall only be done as noted on drawings or approved by the Owner.

2. All brush, stumps, wood and other refuse from the trees shall be removed from the site or burned with proper permits (where applicable).

D. PROTECTION OF TREES

1. General Protection: the Contractor shall be responsible for the protection of tops, trunks and roots of existing trees on the project site that are to remain. Existing trees subject to construction damage shall be boxed, fenced or otherwise protected before any work is started; do not stockpile within branch spread. Remove interfering branches without injury to trunks and cover scars with tree paint.

E. STRIPPING OF TOPSOIL

1. Remove topsoil to a depth of 6 inches (or as indicated by Owner's Geotechnical Engineer) from the areas to be occupied by roads, walks, buildings, and parking areas. Pile and store topsoil at a location where it will not interfere with construction operations. Top soil shall be reasonably free from subsoil, debris and stones larger than 2 inches.

F. DISPOSITION OF UTILITIES

1. Rules and regulations governing the respective utilities shall be observed in executing all work under this section.

2. It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall be the contractor's responsibility to contact the owners of the various utilities before work is started. The contractor shall notify in writing the owners or the engineers of any changes, errors or omissions found on these plans, and/or in the field before work is started or resumes.

3. Where active utilities are encountered but not shown on the drawings, the Contractor shall notify the Utility Company, Owner and Engineer prior to proceeding with any work. An appropriate course of action shall be agreed upon by the Utility Company, Owner and Engineer prior to work commencing.

4. Inactive and abandoned utilities encountered in excavating and grading operations shall be reported to the Engineer. They shall be removed, plugged or capped as directed by the Engineer and/or Utility Company.

G. SITE GRADING

1. Grades: Perform all cutting, filling, compacting of fills and rough grading required to bring entire project area to subgrade as shown on the drawings. Undercut open areas 4" for topsoil.

2. Rough grading: the tolerance for paved areas shall not exceed 0.10 feet above established subgrade. All other areas shall not exceed 0.10 feet plus or minus the established grade. Provide roundings at top and bottom of banks and other breaks in grade. All open areas shall be graded a minimum of 0.5% and a maximum of 3H:1V slope.

3. Sub-grade shall be proof rolled with suitable equipment and all spongy and otherwise unsuitable material shall be removed and replaced with suitable material. Contractor shall coordinate the proof roll procedure with the agency having jurisdiction to ensure proper representation is in attendance for the test.

4. Sub-grade for building areas shall be compacted to a minimum compaction of 95% Modified Proctor Density or per the Archetectual/Structural Construction Plans for the corresponding building area. The Archetectual/Structural plans shall govern.

5. Sub-grade for streets and paved areas - See PAVEMENT specifications.

6. See PAVEMENT section for additional information.

7. All fill material shall be formed from soil free of deleterious material. Prior to placement of fill, a sample of the proposed material shall be submitted to the Owner's Geotechnical Engineer for approval. The fill material shall be placed in layers not to exceed 8" in loose thickness and shall be spread and compacted at the proper moisture content.

8. All fill material in areas outside of building and pavement areas shall be compacted lightly with each lift and protected from erosion. Areas of building construction shall have suitable fill material placed and compacted in accordance with the Soils Engineer's report and per sub-section 4 described above in this Section.

9. The Contractor shall verify all earthwork quantities prior to the start of construction. The Contractor shall notify the Owner and Engineer in writing if excess or shortage of earth quantities is encountered and verify requirements for stockpiling, removal or importing earth. Owner and Engineer hereby reserve the right to allow minor adjustments in proposed grades to reduce an earth quantity disparity.

H. SEEDING PREPARATION

1. Contractor shall resolve any surface or subsurface drainage problems and construct permanent erosion control structures.

2. Remove all rocks, roots or other materials that may interfere with seedbed preparation.

3. Perform the major filling, shaping and smoothing of gullied or severely eroded areas.

4. Have soil tested to check pH and fertility levels. Apply lime at rate specified in seeding specifications on the plans.

5. Work all lime and fertilizer into the soil to a depth of 2-3 inches with a small disk, harrow or rake operated across the slope as much as possible.

6. Firm the soil bed where possible. Do not over pack the soil to ensure compacting does not restrict water and root penetration into the soil.

STORM SEWER SYSTEMS

Storm construction procedures, materials, testing, details and specifications shall be in accordance with CITY OF FRANKLIN STORMWATER AND ENGINEERING TECHNICAL AND CONSTRUCTION STANDARDS. Please refer to these standards, specifications, and details for all storm sewer system construction.

WATER & FIRE SUPPRESSION SYSTEMS

Water construction procedures, materials, testing, details and specifications shall be in accordance with INDIANA AMERICAN WATER TECHNICAL & CONSTRUCTION STANDARDS. Please refer to these standards, specifications, and details for all water system construction.

Fire Suppression systems construction procedures, materials, testing, details and specifications shall be in accordance with INDIANA AMERICAN WATER UTILITY AND FRANKLIN FIRE DEPARTMENT TECHNICAL & CONSTRUCTION STANDARDS. Please refer to these standards, specifications, and details for all fire suppression system construction.

DEWATERING AND CONTROL OF SURFACE WATER

Whenever groundwater is encountered, the CONTRACTOR shall make every practical effort to secure a dry trench bottom before laying pipe. The CONTRACTOR shall provide, install and operate sufficient trenches, sumps, pumps, hose, piping, well points, etc. to depress and maintain the groundwater level below the base of the excavation. If the CONTRACTOR is unable to remove the standing water in the trench, the CONTRACTOR shall over-excavate the proposed bottom grade of the sewer bedding, and place not less than three (3) inches of No. 8 crushed stone in the over-excavated area.

The CONTRACTOR shall keep the site free of surface water at all times and shall install drainage ditches, dikes, pumps, and perform other work necessary to divert or remove rainfall and other accumulation of surface water from excavations. The diversion and removal of surface and/or groundwater shall be performed in a manner which will prevent the accumulation of water within the construction area. UNDER NO CIRCUMSTANCES SHALL SURFACE WATER AND/OR GROUNDWATER BE DISCHARGED TO, DISPOSED OF OR ALLOWED TO FLOW INTO AN ACTIVE SANITARY SEWER SYSTEM.

1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL CITY OF FRANKLIN CONSTRUCTION STANDARDS AND SPECIFICATIONS (STANDARDS) UNLESS SPECIFICALLY NOTED OTHERWISE.
2. INDIANA STATE DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, TO BE USED WITH THESE PLANS. (SUPPLEMENTAL SPECIFICATIONS)
3. IN THE EVENT THESE PLANS OR SUPPLEMENTAL SPECIFICATIONS ARE IN CONFLICT WITH SAID STANDARDS, THE MORE STRINGENT REQUIREMENTS SHALL BE USED.

Fritz Engineering Services, LLC
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Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

ASHTON J. FRITZ
PRELIMINARY - NOT FOR CONSTRUCTION
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

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PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003
SHEET NAME
GENERAL SPECIFICATIONS
SHEET NO.
C901

SANITARY SEWER SYSTEMS

Sanitary construction procedures, materials, testing, details and specifications shall be in accordance with CITY OF FRANKLIN WASTEWATER STANDARDS & SPECIFICATIONS. Please refer to these standards, specifications, and details for all sanitary sewer system construction.

SECTION 9

INSPECTION, TESTING AND ACCEPTANCE

9.01 General

This section describes the minimum requirement and general procedures for the inspection, testing and acceptance of systems dedicated to the DPW.

Connection Permits for sanitary service will not be issued until all the requirements of this section are fulfilled.

9.02 Inspection

Inspection of the construction shall occur for the duration of the project, including the installation of service laterals. The Owner shall execute the Agreement with DPW for such services if the DPW does not have staff available to perform such inspections.

A. Estimated Cost

The DPW shall send a letter to the Owner stating the estimated manhours and amount of the inspection fee to be paid to the City for services performed by representatives of the DPW. The amount provided in the letter shall be 75% of the total estimated cost of the inspection services based upon the estimated payment manhours multiplied by the base hourly rate.

The estimated manhours shall be based upon the following assumptions:

Average daily production = 250 ft./day
Final inspection + Verification of As-Builts = 8 hours
Inspection Time = 20 - 30 hrs/week

Where a lift station is required, additional time for the inspection during construction and final start-up shall be added.

The fee provided is a pre-construction estimate only. The actual inspection time may vary for project to project and may exceed or be less than the estimate based upon the actual project duration. Inspection time at the site shall be verified by the Owner or a representative of the Owner.

The remaining cost, 25%± shall be paid prior to final acceptance by the DPW.

B. General Requirements

1. Contractor and/or Owner shall provide notice to the DPW and his representative of the planned commencement of construction forty-eight (48) hours prior to such commencement.

2. Once the construction starts, the Contractor shall be responsible for informing and/or notifying the inspection representative assigned of the following:

a. Daily work schedule, including any changes in schedule;
b. Prior notification if work is to be performed on weekends and/or holidays;
c. Date tests are to be performed; and
d. Date as-built verification is to be performed.

3. The DPW, upon request of the Contractor and/or Owner, will schedule the Final Inspection.

All testing required shall be performed under the observation of the DPW or DPW's representative. It shall be the Contractor's responsibility to schedule the testing with the DPW representative and/or DPW. Test results obtained in the absence of the presence of the DPW will not be accepted.

9.03 Testing

A. Leakage Testing

1. General

All sanitary sewers shall be tested for infiltration and exfiltration.

Contractor shall furnish all labor, materials and equipment required for making tests. Tests shall be made at times arranged with the DPW and his representative. Sections of sewers shall be isolated and measurements of infiltration and exfiltration shall be made by approved means. The DPW or his representative must be present during all final tests.

Sewers whose crowns are below ground water level at time of testing shall be tested for infiltration. Where crown of pipe is above ground water level, sewer shall be tested for exfiltration. If ground water level varies during period of construction, sewers may be tested for both. Spans are not to be tested for Final Acceptance until complete.

Immediately preceding all leakage tests (exfiltration, infiltration and air) the sewer to be tested shall be cleaned by flushing a ball through the pipe. The Contractor shall furnish an inflatable rubber ball of a size that will inflate to fit snugly into the pipe to be tested. The ball may, at the option of the Contractor, be used without a tag line; or a rope or cord may be fastened to the ball to enable the Contractor to know and control its position at all times. The ball shall be placed in the last cleanout or manhole on the pipe to be cleaned, and water shall be introduced behind it. The ball shall pass through the pipe with only the pressure of the water impelling it. All debris flushed out ahead of the ball shall be removed at the first manhole where its presence is noted. In the event cemented or wedged debris, or a damaged pipe shall stop the ball, the Contractor shall remove the obstruction.

2. Infiltration Tests

Sanitary sewers which are constructed with ground water level above Crown of pipe shall be tested for infiltration after sewers have been installed and backfilling has been substantially completed. A convenient section of sewer shall be selected between manholes. The upper section of sewer shall be plugged watertight with temporary bulkhead. A suitable measuring device shall be installed at the lower end.

The amount of water flowing through the outlet shall be measured periodically through the next twenty-four (24) hours. The flow thus measured shall then be converted by gallons per day per inch diameter per mile and compared with the maximum allowable limit of two hundred (200) gpd/in./mile.

3. Exfiltration Tests

A section or sections of sanitary sewer between manholes shall be isolated by water tight bulkheading. Isolated sections shall then be filled with water to a level three (3) feet above the crown of the pipe at the upstream end of the section; water level at the downstream end of the section shall not be more than six (6) feet above the crown of the pipe. After allowing the system to stabilize overnight, the section shall be refilled with water to the original level. After one (1) hour more, the volume of water lost in the section shall be determined by measuring the drop in the water level.

4. Allowable Leakage

Infiltration or exfiltration of any given segment of sewer pipe shall not be permitted to exceed a rate of two hundred (200) gallons per twenty-four (24) hours per mile of sewer per inch of pipe diameter (0.158 gph/in./100 ft.).

5. Low Pressure Air Testing

For gravity sanitary sewers installed with the pipe crown above the ground water level, air pressure testing may be used in lieu of the exfiltration test. Low pressure air testing is used to determine the existence of pipe leaks; however, it does not indicate water leakage limits.

Prior to the low pressure air testing, all wyes, tees, or end of side sewer stubs shall be plugged with flexible-joint caps, or acceptable alternate, securely fastened to withstand the internal test pressures. Such plugs or caps shall be readily removable, and their removal shall provide a socket suitable for making a flexible-jointed lateral connection or extension.

All plugs shall be securely braced to prevent possible blowout due to internal air pressure. One plug shall have an inlet tap, or other provision for connecting a hose to a portable air supply source. Air hose shall be connected to the inlet tap and a portable air supply source.

Air equipment shall consist of all necessary valves and pressure gages to control rate of air flow into the test section and to enable monitoring of air pressure within the test section. Testing apparatus shall also be equipped with pressure relief device to prevent the possibility of loading test section with full capacity of compressor.

Air shall be slowly added to test section until pressure inside pipe is raised to 4.0 psig. After a pressure of 4.0 psig is obtained, air supply shall be regulated such that pressure is maintained between 3.5 and 4.0 psig for a period of two (2) minutes, to allow air temperature to stabilize in equilibrium with temperature of pipe walls. Pressure will normally drop slightly until equilibrium is obtained. During this period, all plugs shall be checked with soap solution to detect any plug leak.

After this two (2) minute air stabilization period, air supply shall be disconnected and test pressure allowed to decrease. Time required for test pressure to drop from 3.5 psig to 2.5 psig is determined by means of stop watch, and this time interval is then compared with required time to determine if rate of air loss is within the allowable limit. Required time to arrive at the allowable air loss is calculated by means of following formula:

$$T = \frac{0.0850\,DK}{Q}$$

Where:
T = time in seconds
K = .000419 DL but not less than 1.0
Q = Rate of loss (=0.003 cfm/sq. ft. of internal surface)
D = Diameter of pipe in inches
L = length of pipe tested in feet

Upon completion of test, the bleeder valve shall be opened and all air allowed to escape. Plugs shall not be removed until all air pressure in test section has been released. Also, no one shall be allowed in trench or manhole while test is being conducted.

All pipe lines thirty (30) inch diameter and over shall be tested one joint at a time with joint testing apparatus. Joint shall be isolated with an expanding shield equipped with gaskets which fit tightly against pipe walls on each side of joint to be tested. Allowable leakage for such a test is equal to that which would occur on the basis of allowable leakage for one length of pipe.

If measured time interval for the pressure to drop from 3.5 psig to 2.5 psig is less than the required time as calculated, sewer section shall be deemed to have failed test. Contractor shall then proceed to repair pipe at his cost as necessary until the sewer section passes the test. All testing shall be conducted in presence of DPW or his representative (inspector).

6. Excessive Leakage

If infiltration or exfiltration rate of sewer exceeds maximum rate specified, contractor shall make all necessary repairs to reduce leakage below the allowable. Such repairs shall be made at Contractor's expense. Under no circumstances will grouting be considered an acceptable means of repair. When repairs have been completed, but not more than thirty (30) days after first test, sewer section shall be subjected to a second leakage test as specified above.

If the second test should again indicate leakage in excess of the allowable amount, the Contractor shall, at his own expense, provide complete internal inspection of entire section in question, by means of videotape recording of television inspection or by color photography with exposures every two (2) to four (4) feet along the sewer. Contractor shall employ an independent sewer testing service to inspect pipe. Inspection service shall prepare a written report and shall review videotape or films with DPW, Contractor, and DPW's representative. Contractor shall then submit a written plan for correction of leakage. Contractor, DPW, and DPW's representative shall meet as necessary to develop actual program for inspection and repair. Contractor shall not proceed to repair line until he receives written authorization to proceed from City Engineer, DPW or DPW's representative. All inspections, reports, repair, replacement, and compensation for additional professional expense shall be paid by the Owner/Contractor.

B. Deflection Testing of Installed Flexible Plastic Pipe

1. Final Acceptance Test

Prior to the final deflection test, the DPW or his representative may, at his option, order the lamping of certain or all sections. Lamping must show a "full moon" and no excessive puddling effects in the span.

The main line shall be flushed prior to the vertical ring deflection tests. The vertical ring deflection tests shall not be performed prior to successful completion of leakage testing requirements.

All main line plastic pipe and PVC/ABS Truss sewers eight (8) inch in diameter and greater shall be measured for vertical ring deflection at least thirty (30) days after installation, but no later than thirty (30) days prior to final acceptance of the project. Maximum ring deflection of the pipeline under load shall be limited to five percent (5%) of the vertical internal pipe diameter. All pipe exceeding this deflection shall be considered to have reached the limit of this serviceability and shall be relaid or replaced by the Owner/Contractor.

The cost of all deflection testing shall be borne by the Contractor and shall be accomplished by using a deflectometer, which will produce a continuous record of pipe deflection, or by pulling a mandrel, sphere, or pin-type go/no-go device through the pipeline. The diameter of the go/no-go device shall be ninety-five percent (95%) of the undeflected inside diameter of the flexible pipe. The mandrell shall be pulled through the sewers by one man, by hand and specifically without the aid of mechanical devices.

C. Sanitary Manhole Testing

All manhole vacuum tests shall be conducted in the presence of a representative of the DPW.

The vacuum test equipment shall consist of: inflatable plugs for all incoming and outgoing sewer lines; an inflatable test collar to seal the manhole at the manhole frame; and a vacuum pump. A vacuum gauge shall be located in-line between the test collar and the pump to accurately indicate the vacuum in inches of mercury within the manhole. The vacuum gauge shall have a range to no more than thirty (30) inches of mercury, with scale markings of no greater than one-half (1/2) inch of mercury vacuum and an accuracy to within ± two percent (2%) of true vacuum.

The vacuum test shall be conducted by plugging all incoming and outgoing sewer lines in the manhole at a location beyond the connection of the sewer pipe with the manhole. All plugs shall be blocked in place so as not to move during the test. The vacuum testing collar shall be inflated in the frame in accordance with the equipment manufacturer's recommendations. A vacuum of ten (10) inches of mercury shall be drawn and the vacuum pump turned off and the valve between the vacuum pump and the vacuum gauge shall be turned off.

The time period which is taken for the vacuum to fall from ten inches (10") of mercury to nine inches (9") of mercury shall be determined. If the time taken for the vacuum to reduce the ten inches (10") of mercury to nine inches (9") of mercury is less than the time indicated in the following Table, then the manhole work shall be considered not acceptable and shall be rejected. If the time is equal to or exceeds the time indicated below, the manhole work shall be accepted.

Manhole Depth (ft.)	Time (sec)		
Diameter =	48"	60"	72"
8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	65
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121
For each add'l 2' add:	5	7	8

Contractor shall submit to the DPW the results of each manhole vacuum test. Such reports shall include a description of the location of the manhole, the time, date and weather of the test, a list of all persons present, the diameter and depth of the manhole and the allowable test results, and the actual test results.

All manholes shall be repaired by Contractor and retested as described above until a successful test is made. After each test, the temporary plugs shall be removed.

Once all manholes have been tested, the manholes will be given a field visual inspection. The inspection shall be performed at the discretion of the DPW during the warranty period following a rainfall sufficient enough to raise the groundwater table above the problem areas. All leakage problems determined by this inspection shall be corrected by the Contractor within an agreed upon time to the satisfaction of the DPW. Where necessary to complete the work, the Contractor shall be responsible for the bypassing and/or blocking of the flow in the manholes and must have prior approval by the City Engineer or DPW. It will be the Contractor's responsibility to supply his own traffic control as required by the particular location and/or jurisdiction.

1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL CITY OF FRANKLIN CONSTRUCTION STANDARDS AND SPECIFICATIONS (STANDARDS) UNLESS SPECIFICALLY NOTED OTHERWISE.
2. INDIANA STATE DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, TO BE USED WITH THESE PLANS. (SUPPLEMENTAL SPECIFICATIONS)
3. IN THE EVENT THESE PLANS OR SUPPLEMENTAL SPECIFICATIONS ARE IN CONFLICT WITH SAID STANDARDS, THE MORE STRINGENT REQUIREMENTS SHALL BE USED.

Fritz Engineering Services, LLC
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Carmel, Indiana 46033
P: 317.324.8695 F: 317.324.8717
www.Fritz-Eng.com

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS AND ISSUES	DATE	BY

GENERAL NOTES / LEGEND:

"IT'S THE LAW"
811
Know what's below. Call before you dig.
2 WORKING DAYS BEFORE YOU DIG.

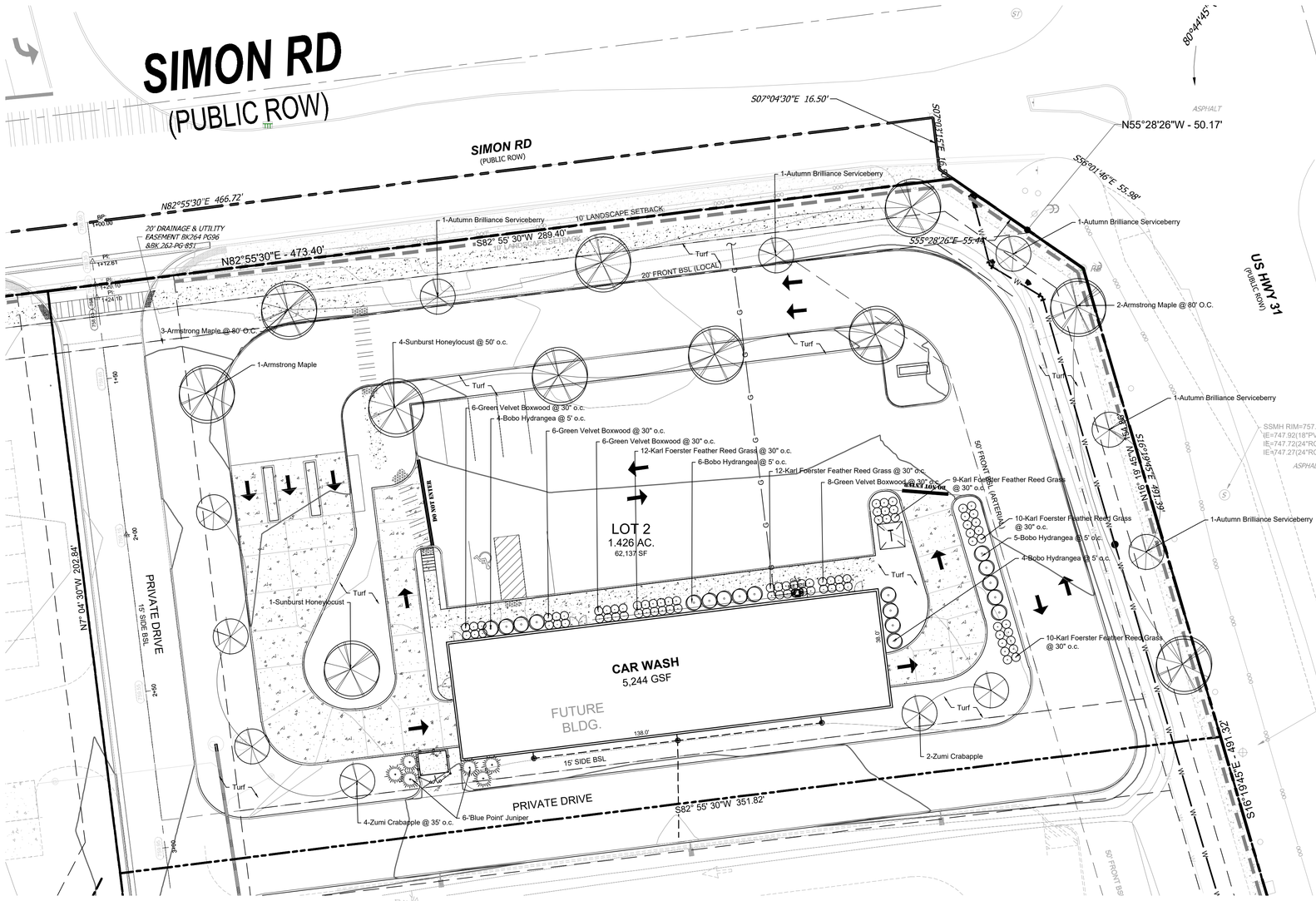
PROJECT:
BDH REALTY CAR WASH

PROJECT LOCATION:
2140 N MORTON ST.
FRANKLIN, INDIANA 46131
JOHNSON COUNTY

SECTION, TOWNSHIP, RANGE:
NE 1/4, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021
DESIGN: AF CHECK: AF DRAWN: KG
PROJECT NO. 2006003
SHEET NAME: GENERAL SPECIFICATIONS
SHEET NO. C902



SYMBOL LEGEND

EXISTING TREE

PROPOSED CANOPY TREE

PROPOSED ORNAMENTAL TREE/ LARGE SHRUB

PROPOSED EVERGREEN TREE

PROPOSED SHRUB

0 20' 40'
SCALE: 1" = 20'

GENERAL NOTES

PLANT MATERIAL SHALL BE SELECTED AND INSTALLED TO COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. LANDSCAPE MATERIALS SELECTED SHALL BE APPROPRIATE TO LOCAL GROWING AND CLIMATE CONDITIONS AND FOLLOW THE GUIDELINES SET BY THE AMERICAN STANDARD FOR NURSERY STOCK. ANSI Z60.1 (CURRENT EDITION) AMERICAN ASSOCIATION OF NURSERYMEN, INC.

2. ALL PLANTS SHALL BE OF SPECIMEN QUALITY, SUPERIOR FORM, HEALTHY, VIGOROUS, WELL BRANCHED, DENSELY FOLIATED WHEN IN LEAF, FREE OF DISEASE AND INSECTS EGGS OR LARVAE AND SHALL HAVE WELL-DEVELOPED ROOT SYSTEMS. PLANTS SHALL BE FREE FROM DAMAGE OR CONDITIONS THAT WOULD PREVENT NORMAL GROWTH.

3. ALL PLANTING MATERIAL SHALL BE IN ACCORDANCE WITH THE MOST CURRENT PUBLICATION OF THE AMERICAN STANDARD FOR NURSERY STOCK AS PRODUCED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE, INC.

a. ALL PLANT MATERIAL SHALL BE MAINTAINED ALIVE, HEALTHY, AND FREE FROM DISEASE AND PESTS AND ALL PLANT MATERIALS WHICH DIE FOLLOWING THEIR INSTALLATION SHALL BE REPLACED WITH IDENTICAL VARIETIES OR SUITABLE SUBSTITUTIONS.

b. ALL LANDSCAPED AREAS SHALL BE FREE OF WEEDS, LITTER, GRAFFITI, AND SIMILAR SIGNS OF DEFERRED MAINTENANCE.

c. ALL LANDSCAPE STRUCTURES SUCH AS FENCES AND WALLS SHALL BE REPAIRED OR REPLACED PERIODICALLY TO MAINTAIN AESTHETICALLY APPROPRIATE AND STRUCTURALLY SOUND CONDITIONS.

d. THE MAINTENANCE AND ROUTINE CARE OF PLANT MATERIAL LOCATED WITHIN THE RIGHTS-OF-WAY SHALL BE THE RESPONSIBILITY OF THE ADJACENT PROPERTY OWNERS.

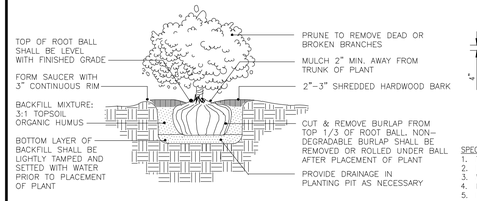
FOR PURPOSES OF THIS SECTION, MAINTENANCE AND CARE SHALL INCLUDE BUT NOT BE LIMITED TO PRUNING, WATERING, FERTILIZING, AND MULCHING, OR ANY ITEM THAT WOULD CONSTITUTE A SAFETY HAZARD TO PEDESTRIAN OR VEHICULAR TRAFFIC.

4. IRRIGATION SYSTEMS SHALL NOT BE INSTALLED IN THE CITY OWNED RIGHT-OF-WAY WITHOUT APPROVAL BY THE BOARD OF PUBLIC WORKS. THE CITY DOES NOT ASSUME RESPONSIBILITY FOR ANY DAMAGE INCURRED TO AN UNPERMITTED IRRIGATION SYSTEM THAT IS CAUSED BY WORK BEING PERFORMED IN THESE AREAS.

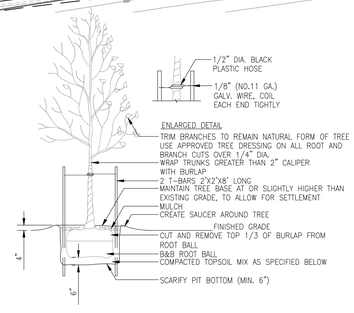
5. IT SHALL BE THE RESPONSIBILITY OF THE OWNERS AND THEIR AGENTS TO INSURE PROPER MAINTENANCE OF ALL TREES, SHRUBBERY AND OTHER LANDSCAPING APPROVED AS PART OF THE DEVELOPMENT PLAN/ADLS PLANS. THIS SHOULD CONSIST OF WATERING, FERTILIZING, PROPER MULCHING, CLEARING OF DEBRIS AND WEEDS, MONITORING FOR PESTS AND DISEASE, MOWING, PRUNING, THE REMOVAL AND TIMELY REPLACEMENT OF DEAD, HAZARDOUS OR DYING PLANTS, TREATING FOR DISEASE OR INJURY, OR ANY OTHER SIMILAR ACT(S) WHICH PROMOTES GROWTH, HEALTH, BEAUTY AND THE LIFE OF TREES, SHRUBS, TURF AND OTHER PLANTS.

PLANT MATERIAL CALCULATIONS TABLE

ZONING CLASSIFICATION, CITY OF FRANKLIN	SITE IS ZONED MXC	
	REQUIRED	PROVIDED
U.S. 31 OVERLAY ZONE	2' WIDE PLANTING STRIPS ALONG SIDEWALK, PLANTINGS OF TREES/SHRUBS 50% OF LENGTH	TURF AREA, PLANT MATERIAL
BUFFER YARDS	NONE	NONE
BUILDING FOUNDATION	GRASSES, PERENNIALS, SHRUBS	GRASSES, PERENNIALS SHRUBS
PARKING LOT INTERIOR	5% OF PARKING, LOADING, DRIVE SHALL BE ISLANDS, 1 TREE PER 300 SF 25,539 SF PAVEMENT=1276 LANDSCAPE AREA REQUIRED	3,750 ISLAND AREA AND 5 TREES PROVIDED
PARKING LOT PERIMETER	10' WIDE STRIP ADJACENT TO R/W 1 TREE PER 80 LF 1 SHRUB PER REQUIRED TREE NORTH PERIMETER=245 LF EAST PERIMETER=165 LF	NORTH PERIMETER= 3 TREES, 3 SHRUBS EAST PERIMETER= 2 TREES, 2 SHRUBS
SITE INTERIOR	1 TREE PER 1,500 SF OF YARD AREA YARD AREA=12,636 SF	8 TREES ON SITE
DUMPSTER SCREENING	6' HIGH OPAQUE SCREEN	VEGETATIVE AND ARCHITECTURAL SCREEN
MONUMENT SIGN	GRASSES, PERENNIALS, SHRUBS	GRASSES, PERENNIALS, SHRUBS



SHRUB PLANTING DETAIL



SPECIFICATIONS:
1. TOPSOIL MIX, TOP 6 INCHES OF SOIL TO BE A 50/50 MIX OF NATIVE SOIL AND GENERAL PLANTING
2. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE.
3. WATER THOROUGHLY AFTER INSTALLATION.
4. REMOVE TREE RINGS AND STAKES TWO YEARS AFTER INSTALLATION.
5. PROVIDE DRAINAGE FOR PLANTING PIT IN IMPERMEABLE SOIL.
6. ALL TREES MUST BE TAGGED AND APPROVED BY CONSULTANT WITHIN 14 DAYS AFTER TENDER CLOSI

TREE PLANTING DETAIL

NOTE: ALL PLANT MATERIAL TO MATCH THE CURRENT CITY OF FRANKLIN PLANT MATERIAL LIST

PLANTING SCHEDULE					
Quantity	**Botanical Name**	**Common Name**	**Condition**	**Size**	**Comments**
Canopy Trees					
5	Gleditsia trianthos 'Sunburst'	Sunburst Honeylocust	B&B	2.5" Cal.	For spacing see plan
6	Acer rubrum 'Armstrong'	Armstrong Maple	B&B	2.5" Cal.	For spacing see plan
Ornamental Trees					
5	Amelanchier x grandiflora	Autumn Brilliance Serviceberry	B&B	Clump	For spacing see plan
6	Malus Zumi	Zumi Crabapple	B&B	1.5" Cal.	For spacing see plan
Evergreen Tree					
6	Juniperus chinensis 'Blue Point'	Blue Point Juniper	Cont.	5'	For spacing see plan
Evergreen Shrub					
28	Buxus 'Green Velvet'	Green Velvet Boxwood	Cont.	24"	For spacing see plan
Deciduous Shrub					
18	Hydrangea pan 'Bobo'	Bobo Hydrangea	Cont.	24"	For spacing see plan
Ornamental Grass					
53	'Karl Foerster' Feather Reed Grass	Clamagrostis x acutiflora	Cont.	18"	For spacing see plan

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SHTON L. FRITZ
PRELIMINARY NOT FOR CONSTRUCTION
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS AND ISSUES	DATE	BY

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JOHNSON COUNTY
SECTION, TOWNSHIP, RANGE:
NE ¼, S10, T12N, R4E

CLIENT:
BDH REALTY
8220 SOUTH US 31
INDIANAPOLIS, INDIANA 46227

PLAN DATE: 3/26/2021

DESIGN:	CHECK:	DRAWN:
AF	AF	KG

PROJECT NO. 2006003

SHEET NAME
LANDSCAPE PLAN

SHEET NO.
L101