MIDLAND REALTY GROUP

NEW BUILDING - CITY OF FRANKLIN, INDIANA CIVIL PLANS





INDEX

DESCRIPTION

SHEET

NO.

C100

C101

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COVER SHEET

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SWPPP

UTILITY PLAN

EXISTING CONDITIONS

GRADING AND DRAINAGE PLAN

EROSION CONTROL DETAILS

EROSION CONTROL NOTES

GENERAL SITE DETAILS GENERAL SITE DETAILS

SPECIFICATIONS

LANDSCAPE PLAN

REVISION DATES

OWNER: MIDLAND REALTY GROUP 5324 Elmwood Avenue Indianapolis, Indiana 46203

ENGINEER: SOLOMON CONSULTING 525 E. Morris Street Indianapolis, Indiana 46203 Ph: 317-590-0658

LOT 7 1.766 AC

ZONING:

PROJECT SITE: INDUSTRIAL, LIGHT (IL) PROPOSED USE PERMITTED: WAREHOUSE & **DISTRIBUTION FACILITY ADJACENT SITE:** NORTH: PUD EAST: IBD

SOUTH: IL WEST: IL

OPERATING AUTHORITIES

Franklin Planning and Engineering **70 East Monroe Street** Franklin, IN 46131 **Contact: Mark Richards (City Engineer)** Phone: (877) 736-3631 Email: mrichards@franklin.in.gov

City of Franklin (storm) Tyler Urban (MS4 Coordinator) 796 S State Street Franklin, IN 46131 Phone: (888)736-3640

City of Franklin (wastewater) Dept. of Public Works Sally Brown, Superintendent 796 S State Street Franklin, IN 46131

FLOOD ZONE:

THE PROJECT IS LOCATED IN THE SHADED ZONE "X" (AREAS DETERMINED TO BE WITHIN THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN) AS INDICATED ON THE JOHNSON COUNTY, INDIANA FLOOD INSURANCE RATE MAP 18081C0231E, DATED **JANUARY 29, 2021.**

Phone: (888)736-3640x1200

Indiana American Water Company (water) Troy Bryant Phone: (317)831-3385

Johnson County REMC (electric) 750 International Drive PO Box 309 Franklin, IN 46131

Vectren Energy (gas) PO Box 209 Evansville, IN 47702 (812)464-4600

Century Link/Metronet/Comast (Telephone/Fiber/Cable)

SITE BENCHMARK

TOP OF IRON PIN LOCATED AS SW LOT CORNER ELEV. = 740.09 NAVD88







CHKD. BY: AS SHOWN 10/11/2023 PROJECT NUMBER 22-101 DRAWING NUMBER CIOO

SHEET | OF 12

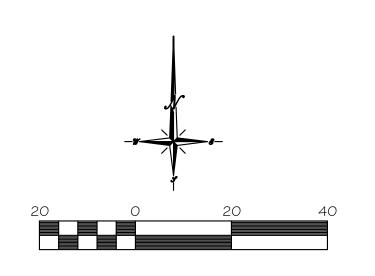


FRANKLIN, IN 46131

LEGAL DESCRIPTION

A part of the Southwest Quarter of Section 12, Township 12 North, Range 4 East of the Second Principal Meridian, Johnson County, Indiana, described as follows:

Lot numbered 8 in Section 3 of the HURRICANE INDUSTRIAL PARK as recoreded as Instrument No. 2005-034659 in the Recorder's Office of Johnson County, Indiana.



LEGEND

=====S=== EXISTING SANITARY SEWER & MANHOLE

EXISTING STORM SEWER; INLET & M.H.

——— G ——— EXISTING GAS LINE

---- W ---- EXISTING WATER LINE

— E — EXISTING UNDERGROUND ELECTRIC LINE

_____ T ____ EXISTING UNDERGROUND TELEPHONE LINE

—— TV —— EXISTING CABLE TELEVISION LINE

EXISTING FIRE HYDRANT

existing valve; gas & water

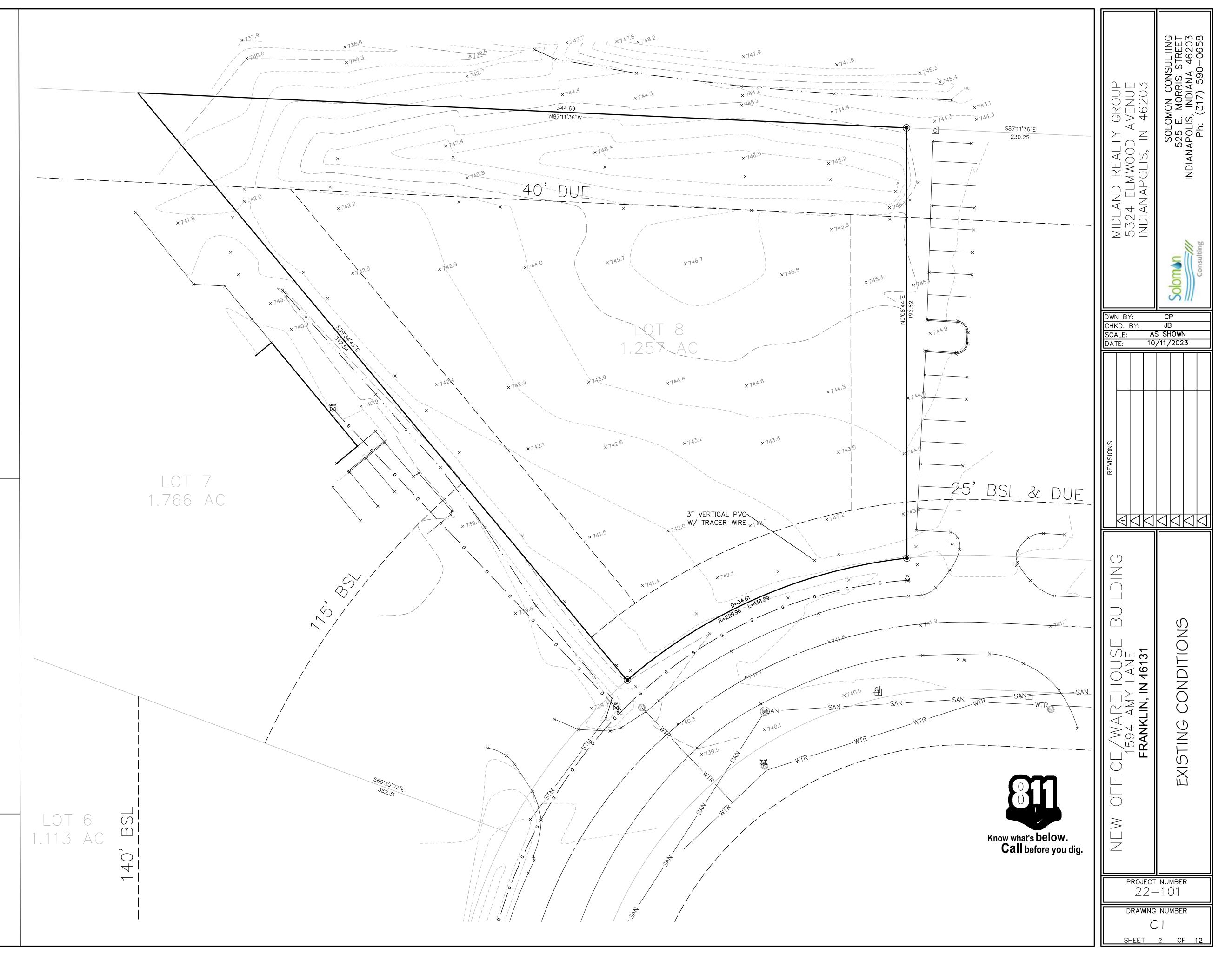
EXISTING ELECTRIC MANHOLE & TRANSFORMER

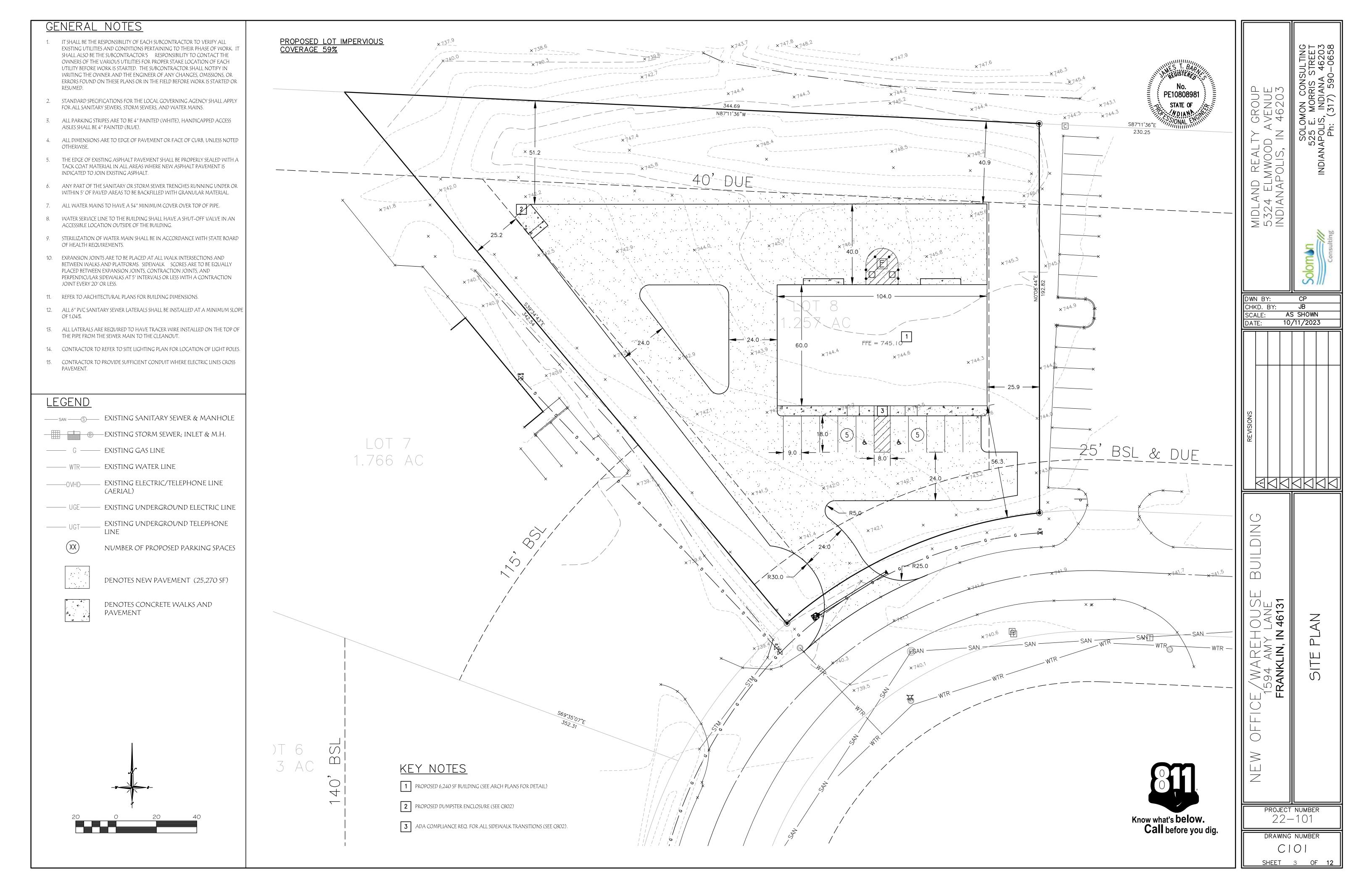
EXISTING TELEPHONE MANHOLE &

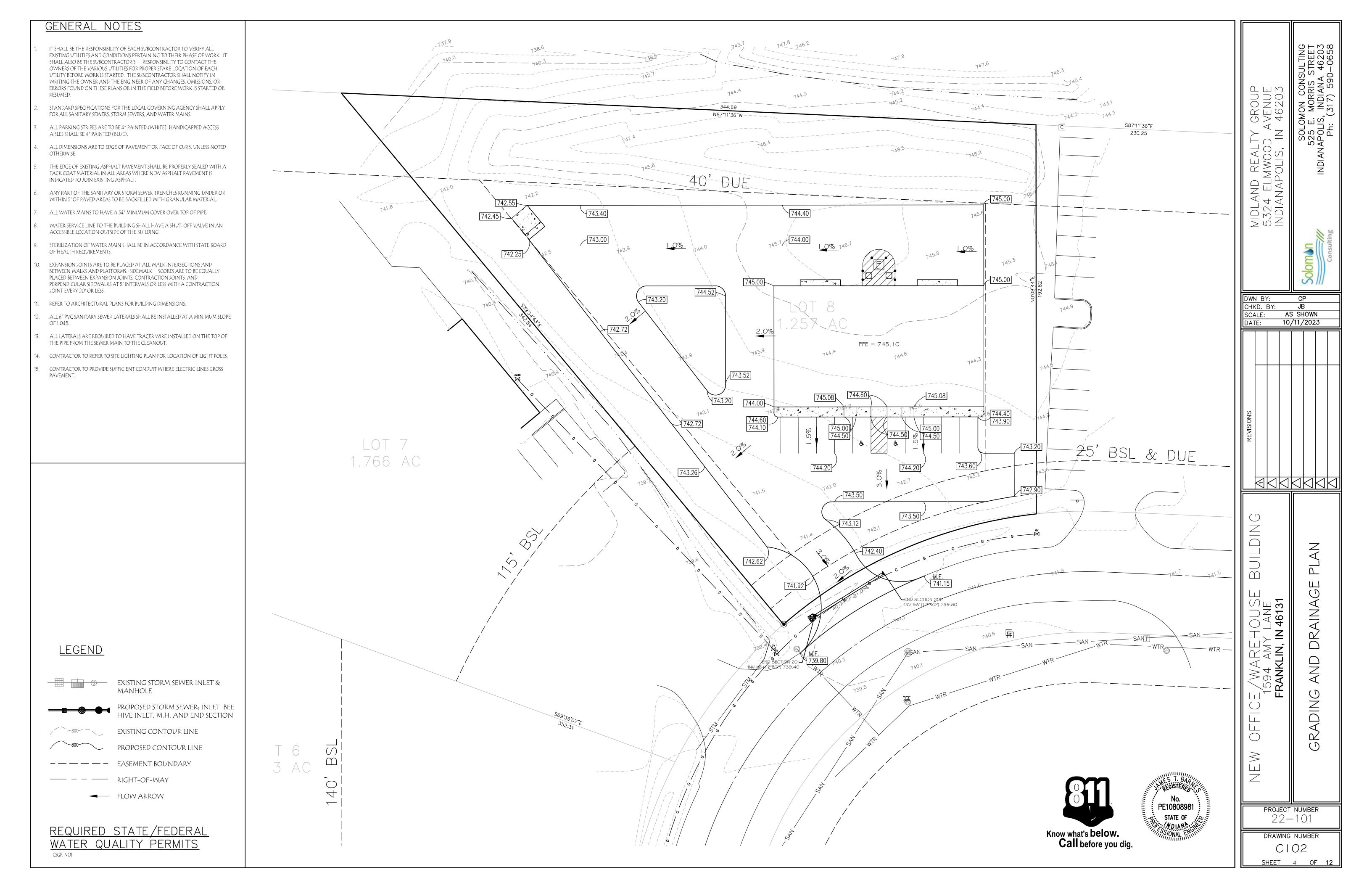
PEDESTAL

EXISTING WATER METER









WATER LINE NOTES:

- 1) A MINIMUM OF 54" OF COVER OVER THE ENTIRE WATER LINE SHALL BE PROVIDED.
- 2) ALL PROPOSED WATER LINES SHALL HAVE A 10' LINEAR HORIZONTAL SEPARATION BETWEEN WATER PIPE EXTERIOR AND SANITARY OR SEWER LINE EXTERIORS.
- 3) A MINIMUM OF 18" OF VERTICAL SEPARATION SHALL BE MAINTAINED WHEN CROSSING UNDER ANY UTILITY OR DRAINAGE LINES.
- 4) ALL PC900 PIPE SHALL BE PRESSURE CLASS 200 MINIMUM UNLESS NOTED OTHERWISE.
- 5) ALL VALVES ARE GATE VALVES UNLESS NOTED OTHERWISE.
- 6) COORDINATE WITH LOCAL WATER COMPANY FOR FINAL LAYOUT AND INSTALLATION OF WATER LINE.
- 7) WATER PIPES, BEDDING AND BACKFILL, APPARATUSES, AND FIRE HYDRANTS SHALL CONFORM TO THE GOVERNING WATER COMPANY'S DETAILS AND SPECIFICATIONS.
- 8) PRIOR TO ISSUANCE OF ANY BUILDING PERMITS, ALL WATER MAINS AND HYDRANTS FOR THE SITE DEVELOPMENT MUST BE INSTALLED PER APPROVED SPECIFICATIONS AND MADE SERVICEABLE UNLESS OTHERWISE APPROVED BY THE BUILDING DEPARTMENT AND FIRE DEPARTMENT.
- 9) ALL WATER MAIN INSTALLATION SHALL CONFORM TO INDIANA AMERICAN WATER DETAILS AND SPECIFICATIONS.
- 10) THE VAULT DESIGN WILL BE THE INDIANA AMERICAN WATER DESIGN THAT THE FIRE DEPARTMENT COMMITTEE AGREED ON.

UTILITY PLAN NOTES:

- SEE ARCHITECTURAL PLANS FOR DETAILED INFORMATION AND EXACT LOCATIONS FOR UTILITIES COMING INTO THE BUILDING.
- 2. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR THE CONNECTIONS OF THE UTILITIES TO THE BUILDING.
- 3. FOR VIEWING CLARITY OF THESE CONSTRUCTION PLANS, PIPES OR STRUCTURES MAY NOT BE SHOWN TO SCALE.
- 4. A MINIMUM OF 18" VERTICAL SEPARATION AND 10' HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN WATER AND SANITARY LINES. IF THE SEPARATION CANNOT BE ACHIEVED, THEN THE SANITARY SEWER MUST BE CONSTRUCTED OF WATER WORKS DUCTILE IRON PIPE WITH MECHANICAL JOINTS AND FITTINGS.
- 5. A MINIMUM OF 18" OF VERTICAL SEPARATION BETWEEN STORM AND SANITARY SEWERS SHALL BE PROVIDED. IF THE SEPARATION CANNOT BE ACHIEVED, THEN A CONCRETE SADDLE SHALL BE USED AT THESE CROSSINGS.
- 6. WHEN CONNECTIONS ARE TO BE MADE TO EXISTING PIPING AND STRUCTURES OR WHERE CONSTRUCTION IS IN THE VICINITY OF EXISTING PIPING, THE LOCATION AND ELEVATION OF THE EXISTING PIPING AND STRUCTURES SHALL BE FIELD VERIFIED BY THE CONTRACTOR. IF ANY DISCREPANCIES ARE FOUND, THEN THE ENGINEERING SHALL BE NOTIFIED IMMEDIATELY.

<u>LEGEND</u>

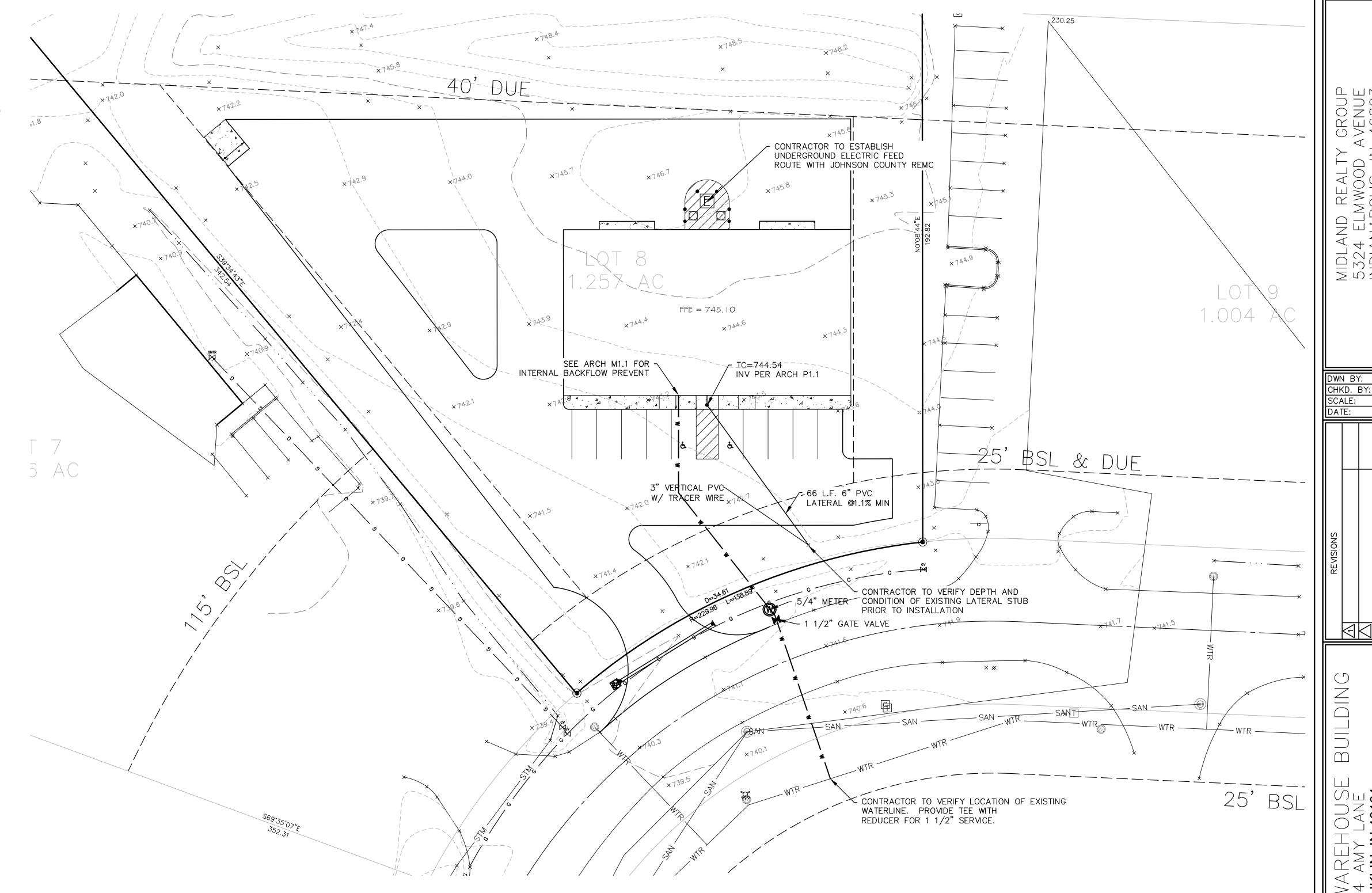
EXISTING STORM SEWER INLET & MANHOLE

EXISTING CONTOUR LINE PROPOSED CONTOUR LINE

PROPOSED LATERAL CONNECTION

PROPOSED WATER SERVICE

• CONCRETE BOLLARD REQ.





SCALE: 1"=20'



EXISTING UTILITIES OUTSIDE OF THE SITE LIMITS WERE NOT LOCATED AS PART OF THE SITE UTILITY LOCATES THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES OUTSIDE OF THE SITE LIMITS PRIOR TO ANY WORK.



PROJECT NUMBER

Z M O G

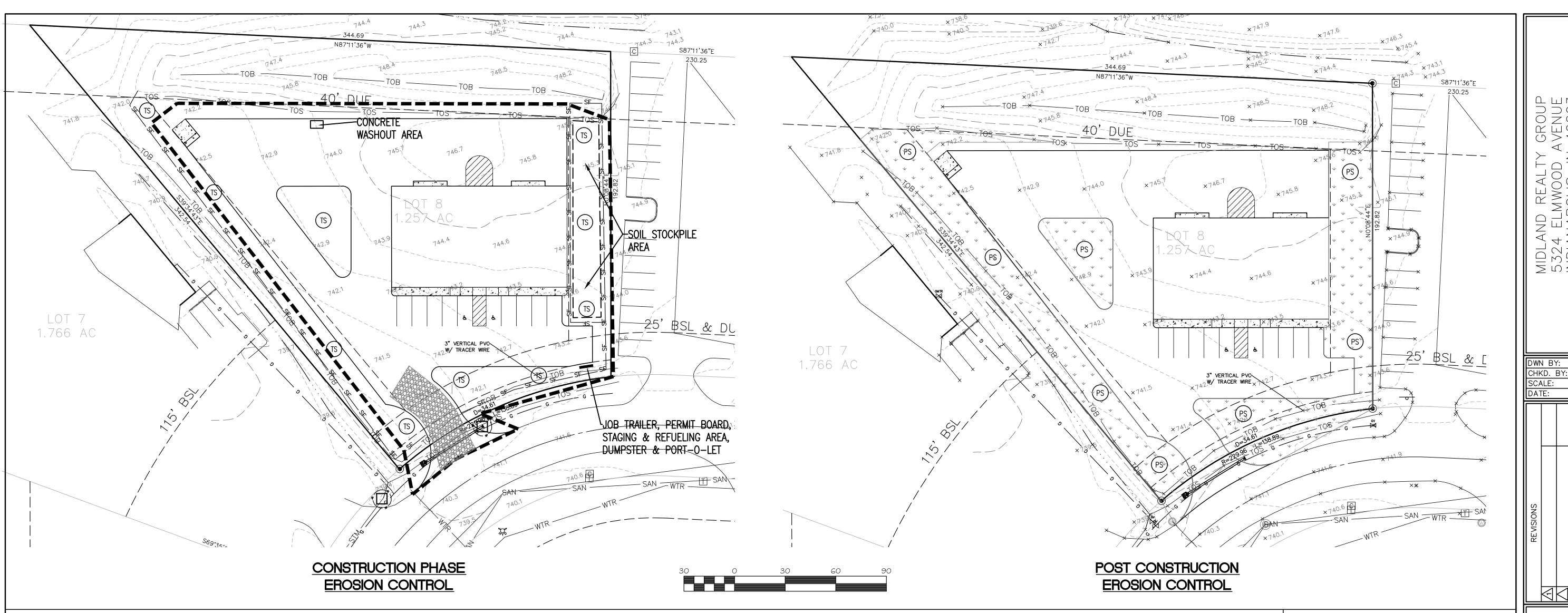
AS SHOWN

10/11/2023

2001 3203

22-101

DRAWING NUMBER C103 SHEET 5 OF 12



EROSION CONTROL NOTES

- 1. CONTRACTOR SHALL INSTALL ALL REQUIRED SILT FENCES, SILT TRAPS, TREE PROTECTION AND INLET PROTECTION FOR EXISTING INLETS PRIOR TO THE START OF ANY EARTH MOVING OR STRIPPING.
- 2. CONTRACTOR SHALL INSTALL A STONE CONSTRUCTION ENTRANCE OR SOME OTHER DEVISE PRIOR TO THE START OF EARTHWORK AS NECESSARY TO PREVENT SOIL FROM BEING TRACKED OR WASHED INTO EXISTING ROADWAYS.
- 3. LAND ALTERATIONS WHICH STRIP THE LAND OF VEGETATION, INCLUDING REGRADING, SHALL BE DONE IN A WAY THAT WILL MINIMIZE EROSION. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED. AS GRADING IS DONE, INSTALL SILT TRAPS, SILT FENCES, SLOPE DRAINS, TEMPORARY DIVERSIONS AND OTHER RUNOFF CONTROL MEASURES AT APPROPRIATE LOCATIONS TO KEEP SEDIMENT CONTAINED ON SITE.
- 4. ALL DISTURBED AREAS SHALL BE SEEDED AND STRAW MULCHED AS SHOWN ON THE PLANS IMMEDIATELY AFTER COMPLETION OF GROUND ACTIVITY. FOR LARGE PROJECTS, THIS SEEDING SHOULD BE COMPLETED IN PHASES AS THE DIFFERENT AREAS OF THE SITE ARE COMPLETED.
- 5. PERMANENT AND FINAL VEGETATION OR STRUCTURAL EROSION CONTROL DEVICES SHALL BE INSTALLED AS SOON AS PRACTICAL UNDER THE CIRCUMSTANCES.
- 6. THE DURATION OF TIME WHICH AN AREA REMAINS EXPOSED SHALL BE KEPT TO A PRACTICAL MINIMUM DEPENDING UPON THE WEATHER. IF CONSTRUCTION ACTIVITY IS TO CEASE FOR MORE THAN TWO WEEKS, THE DISTURBED AREAS SHALL BE TEMPORARILY SEEDED.
- 7. ALL STORM SEWER INLET PROTECTION DEVICES SHALL BE PUT IN PLACE AT THE TIME EACH INLET IS CONSTRUCTED.
- 8. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL MEASURES AND DEVICES DURING CONSTRUCTION AND UNTIL SILTATION OF THE STREETS AND STORM SEWERS WILL NO LONGER OCCUR.
- 9. ONCE ONSITE EROSION AND SILTATION OF THE STREETS AND STORM SEWERS WILL NO LONGER OCCUR, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE TEMPORARY EROSION CONTROL DEVICES.
- 10. THESE GENERAL PROCEDURES MAY NOT COVER ALL SITUATIONS. REFER TO EROSION CONTROL PLANS FOR SPECIFIC NOTES AND ADDITIONAL DETAILS.
- 11. EROSION CONTROL TO COMPLY WITH INDIANA 327 IAC AND RULE #5, AND THE INDIANA STORM WATER QUALITY MANUAL.
- 12. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.
- 13. DIRT AND DEBRIS SHALL NOT BE TRACKED INTO THE ROADWAYS VIA CONSTRUCTION EQUIPMENT AND PERSONNEL.



SOILS MAP



FEMA FLOOD MAP

SCALE: N.T.S.

CSGP INDEX

A. Construction Plan Elements B. Erosion and Sediment

C103		
C100	1.	C105
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C105	3.	C104
C1	4.	C103,C104
C101	5.	C103,C104
C103	6.	C103
C105	7.	C103,C104
C105	8.	C103,C104
C105	9.	C105
C105	10.	C105
	C100 C105 C105 C1 C101 C103 C105 C105	C100 1. C105 2. C105 3. C1 4. C101 5. C103 6. C105 7. C105 8. C105 9.

12. C105 C105 14. C101,C105 C101 C101

C103,C105

C101 C101 C105 20. 21. C105 C105 22. C105 23. C103 24. C103 25. C101 26. 27. C101

C101

C105

C105

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Control/Project Site Management

Contro	ol/Project Site ivia
1.	C105
2.	C103,C104
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5.	C103,C104
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8.	C103,C104
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10.	C105
11.	C105
12.	C105
13.	C105

C. Post Construction

C103

C105

15. C105

- C105 C105 C801 C105 C105, O&M Manual
 - PER INDIANA STATE LAW IS-69-1991. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND



EROSION CONTROL CONTACT

BHR CONSTRUCTION SERVICES ATTN: BILL BOLANDER 317-752-2257 wmsbolander@comcast.net

SITE NOTE

LOCATION SERVICE TWO (2) WORKING

DAYS BEFORE COMMENCING WORK.

NO EARTH DISTURBING ACTIVITY MAY COMMENCE WITHOUT AN APPROVED STORMWATER MANAGEMENT PERMIT.



760.00 PROPOSED GRADE

----- DRAINAGE SWALE

<u>LEGEND</u>

---- SUBSURFACE DRAIN TEMPORARY SEEDING PERMANENT SEEDING EROSION CONTROL BLANKET



LIMITS OF CONSTRUCTION (SI) SILT FENCE INLET PROTECTION

PAVED AREA INLET PROTECTION / CATCH BASIN SEDIMENT INSERT

PROPOSED STORM SEWER; INLET

EXISTING CONTOUR LINE

PROPOSED CONTOUR LINE

DRAINAGE FLOW ARROW CONSTRUCTION ENTRANCE



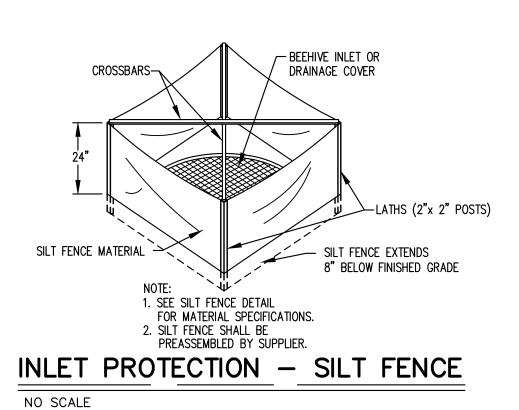
PERMANENT SEEDING

______ EXISTING SANITARY SEWER & MANHOLE PROPOSED SANITARY SEWER & MANHOLE ==== == EXISTING STORM SEWER; INLET & M.H. BEE HIVE INLET, M.H. AND END SECTION PROJECT NUMBER 22-101 DRAWING NUMBER

SHEET 6 OF 12

JB AS SHOWN

10/11/2023

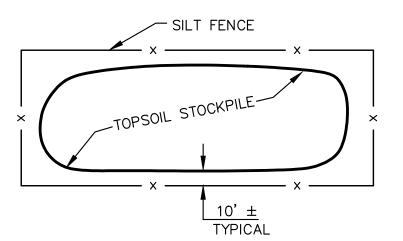


2"-3" COARSE — AGGREGATE

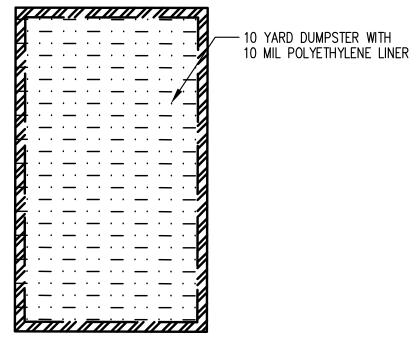
GEOTEXTILE FABRIC TO STABILIZE ——FOUNDATION (ESPECIALLY IMPORTANT WHERE WETNESS IS ANTICIPATED)

TEMPORARY CONSTRUCTION

ENTRANCE DETAIL



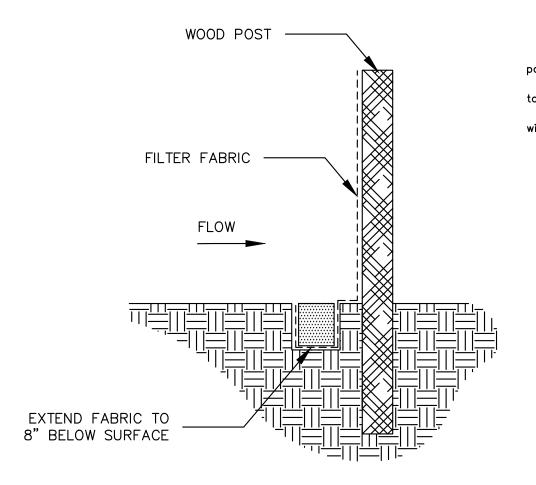
TYPICAL TOPSOIL STOCKPILE

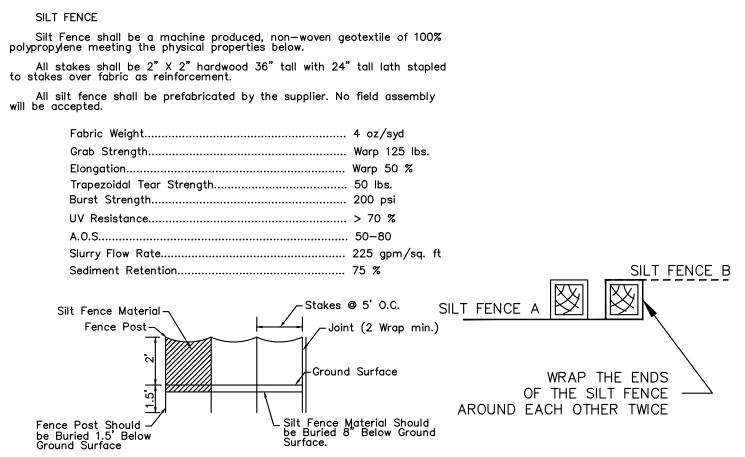


PLAN VIEW 10 MIL POLYETHYLENE LINER TO BE SECURED WITH A MINIMUM OF 12" OF OVERLAP OVER THE TOP OF DUMPSTER EXISTING PAVEMENT

CONCRETE WASHOUT DETAIL

SECTION VIEW





SILT FENCE DETAIL

		SOIL NDITIO	ON	Shade Tolerance	Close Mowing to 2-3 1/2inches	Tromping Tolerance	Fertility Needs	Winter Hardiness	Flooding Tolerance (days)	ure jht (inches)	Emergence Time (days)		Salt leranc	e
	Wet	Norm	Dry	Sage	5 G	호를	Neg L	Wint	Floo Tole	Mature Height	Eme	Gen.	Soil	Spray
Creeping Red Fescue Festuca rubra	2	1	2	1	1	1	Med.	1	20-25	12-18	7-21			s
Kentucky Bluegrass Poa pratinsis	2	1	2	1	1	1	Med.	1	25-35	12–18	10-20			мт
Tall Fescue Festuca L arundinacea	2	1	1	1	1	1	Low	1	24-35	24-36	5–14		Т	
Perennial ryegrass Lolium perenne	2	1	2	-	1	2	Med- High	2	15-20	12–18	5–10		МТ	
Crownvetch Coronilla varia	_	1	1	2	_	_	Low	1	5–10	24	14-21	T		
Red Clover Trifolium pratense	_	1	_	2	_	_	Med.	1	7–10	18	5-10	S	S	

Ranking: 1 Good 2 Medium — Not tolerant Salt Tolerance (to both soil salts & spray): T Tolerance MT Medium Tolerance S Slight Tolerance

FIGURE 5-4

Seedbed Preparation

Apply lime to raise the pH to the level needed for species being seeded. Utilize phosphorus—free fertilizer unless required by soils test. Application of 150 lbs. of ammonium nitrate on areas low inorganic matter and fertility will greatly enhance vegetative growth.

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

Seeding

Select a seed mixture based on projected use of the area (Figure 5-2), while considering best seeding dates. See Figure 5-3 this sheet. If toler—ances are a problem, such as salt tolerance of seedings adjacent to streets and highways, see Figure 5-4 this sheet before final selection.

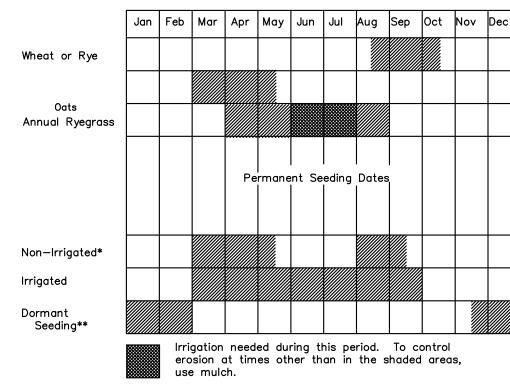
Mulch Rate

Mulch is to be applied at 2,000 to 3,000 pounds per acre in areas not covered by erosion control blanketing. Mulch must be anchored using a mulch anchoring tool or farm disk with dull, serrated, straight set blades, or bulldozer cleats driven up and down slope.

Figure 5—2: Permanent Seed Mixtures

	lb	s/acre	e Ibs/1 sq. ft.		Droughty	well	\٨/ح
			<u> </u>				***
Le	evel and Sloping, Open	Areas					
1.	Tall Fescue	35	.8	5.5-8.3	2	1	2
2.	Tall Fescue Red Clover**	25 5	.6 .12	5.5-8.3		1	
3.	Kentucky Bluegrass Creeping Red Fescue	15 15	.4 .4	5.5-7.5	2	1	
St	eep Banks and Cuts						
4.	Tall Fescue Kentucky Bluegrass	15 25	.4 .6	5.8-7.5	2	1	2
	Tall Fescue	35	.8	5.5-8.3	2	1	
5.	Emerald Crownvetch**	10	.25		_	•	
_							
_ La	Emerald Crownvetch**		reas	5.8-7.5		1	
_ La	Emerald Crownvetch** wns and High Maintena Kentucky Bluegrass	ince A		5.8–7.5 5.0–7.5			

Temporary Seeding Dates



use mulch.
 Late summer seeding dates may be extended 5 days if mulch is applied.

** Increase seeding application by 50%.

FIGURE 5-3

1 1/2" deep		Temporary See	edings — —— —— —— ——
1 1/2" deep	Kind of Seed	1000 Sq. Ft.	Acre Remarks
Spring Oats 2.3 lbs. 3 bu. Cover seed 1" deep	— — — Wheat or Rye	3.5 lbs.	2 bu. Cover seed 1" to
<u> </u>			<u>1_1/2" deep</u>
	Spring Oats	2.3 lbs.	3 bu. Cover seed 1" deep

AD REALTY GROUP
ELMWOOD AVENUE
IAPOLIS, IN 46203
SOLOMON CONSULTING
525 E. MORRIS STREET

5324 ELMV Indianapo

Soloman

DWN BY: CP
CHKD. BY: JB
SCALE: AS SHOWN
DATE: 10/11/2023

WKLIN, IN 46131

CONTROL DETAILS

FRANKLIN, IN 461

PROJECT NUMBER 22-101

DRAWING NUMBER

SHEET 7 OF 12

A3 - NARRATIVE OF THE NATURE AND PURPOSE OF THE PROJECT This project is located at 1594 Amy Lane in Franklin, Indiana. The parcel area by plat is 1.26 AC. The existing site consists of turf grass, excepting the north line which serves as a wooded buffer. The proposed improvements will consist of adding an office / warehouse building, asphalt pavement, landscaping, and utility infrastructure.

A4 - LATITUDE AND LONGITUDE TO THE NEAREST 15 SECONDS Lat: 39.496090 Long: -86.044160

A5 - LEGAL DESCRIPTION OF THE PROJECT SITE See Sheet C1

A6 - 11 X 17-INCH PLAT SHOWING BUILDING LOT NUMBERS/BOUNDARIES AND ROAD LAYOUT/NAMES See Sheet C101

A7 - BOUNDARIES OF THE ONE HUNDRED (100) YEAR FLOODPLAINS, FLOODWAY FRINGES, AND FLOODWAYS None exist

A8 - LAND USE OF ALL ADJACENT PROPERTIES

North: Residential - PUD

West: Industrial - IL

South: Transportation - IL East: Industrial - IBD

A9 - IDENTIFICATION OF A U.S. EPA APPROVED OR ESTABLISHED

A Total Maximum Daily Load (TMDL)Report for the Ray Creek or Youngs Creek has not yet been completed.

A10 - NAME (S) OF THE RECEIVING WATER (S)

Runoff from the project site eventually discharges to Youngs Creek.

HUC14 - 05120204090040

A11 - IDENTIFICATION OF DISCHARGES TO A WATER ON THE CURRENT 303 (D) LIST OF IMPAIRED WATERS AND THE POLLUTANT (S) FOR WHICH IT IS IMPAIRED: Youngs Creek is listed for E. Coli as well as low dissolved oxygen contact.

A12 - SOILS MAP OF THE PREDOMINATE SOIL TYPES:

For soils map see sheet C103. USDA web soil survey mapping identified entirely Miami silt loam; considered to be Hydrologic Soil Grouping 'C' which are considered resistive to infiltration when saturated.

The proposed drainage design will not utilize infiltration measures as the site is pre-planned to drain to a shared wet pond BMP offsite.

A13 - IDENTIFICATION AND LOCATION OF ALL KNOWN WETLANDS. LAKES, AND WATER COURSES ON OR ADJACENT TO THE PROJECT

There are no wetlands, lakes, or watercourses within or adjacent to the subject lot. All discharges will be routed to a wet pond BMP prior to eventual discharge to Youngs Creek.

A14 - IDENTIFICATION OF ANY OTHER STATE OR FEDERAL WATER QUALITY PERMITS OR AUTHORIZATIONS THAT ARE REQUIRED FOR **CONSTRUCTION ACTIVITIES:** CSGP, Notice of Intent

A15 - IDENTIFICATION AND DELINEATION OF EXISTING COVER. **INCLUDING NATURAL BUFFERS:**

The existing site consists of turf grass with woods at the north end that will not be disturbed. The site has been prepared aforehand for future development.

A21 - LOCATIONS WHERE STORMWATER MAY BE DIRECTLY DISCHARGED INTO GROUND WATER. SUCH AS ABANDONED WELLS. SINKHOLES, OR KARST FEATURES

The drainage improvements on site are expected to diminish infiltration of stormwater excesses by rapid routing to existing drainage infrastructure for treatment in an offsite wet pond.

A22 - SIZE OF THE PROJECT AREA EXPRESSED IN ACRES ±1.26 AC

A23 - TOTAL EXPECTED LAND DISTURBANCE EXPRESSED IN ACRES ±0.86 AC

A30 - CONSTRUCTION SUPPORT ACTIVITIES THAT ARE EXPECTED TO BE PART OF THE PROJECT

All Equipment staging and refueling areas will be located on-site. Offsite construction will be limited to right-of-way activities necessary for the connection of utilities.

A31 - LOCATION OF ANY IN-STREAM ACTIVITIES THAT ARE PLANNED FOR THE PROJECT INCLUDING, BUT NOT LIMITED TO, STREAM CROSSINGS AND PUMP AROUNDS

B1 - Description of the potential pollutant generating sources and pollutants, including all potential non-stormwater discharges

Potential pollutants sources relative to a construction site may include, but are not limited to material and fuel storage areas, fueling locations, exposed soils and leaking vehicle/equipment. Potential pollutants that may appear at the site due to construction activities include, but are not limited to diesel fuel, gasoline, concrete and concrete washout, solid waste, sediment, paint and solvents, equipment repair products, anti-freeze and fertilizer. No Non-stormwater discharge sources were identified for this project site.

In order to contain potential pollutants several construction stage measures will be implemented. This includes a stable construction entrance, paved area inlet protection on and adjacent to the site, perimeter silt fencing, and temporary stabilization as necessary.

B2 - Stable construction entrance locations and specifications A stone construction entrance will be located at the east of the site. See Sheet C104 for plan location and Sheet C105 for details and specifications.

B3 - Specifications for temporary and permanent stabilization Seeding will be used as temporary surface stabilization measures as well as Permanent surface stabilization measures. The location of each surface stabilization measure are on sheet C104. The details and specifications for each stated measure are on sheet C105. install temporary seeding after a specific stage of construction has been completed (temporary or final) where areas will be idle of construction activities for a period of 15 days

B4 - Sediment control measures for concentrated flow areas Temporary seeding will be used as erosion control measures for concentrated flows. The location of each measure is located on sheet C104. The details and specifications for each stated sediment control measure is on sheet C105.

B5 - Sediment control measures for sheet flow areas Silt Fencing will be installed along the perimeter of the site. The location of each measure are on sheet C104. The details and specifications for each stated measure are on sheet

B6 - Run-off control measures N/A - Site runoff routed to an offsite pond for treatment.

B7 - Stormwater outlet protection location and specifications Rip-rap is specified at the single culvert outlet on C102.

B8 - Grade stabilization structure locations and specifications No proposed grades exceed 4:1 (H:V). Grade stabilization will be installed on any construction phase slopes 3:1 or greater such as the top soil stockpile area. The location of each measure are on sheet C104. The details and specifications for each stated measure are on sheet C105.

B9 - Dewatering applications and management methods

B10 - Measures utilized for work within waterbodies

B11 - Maintenance guidelines for each proposed stormwater quality measure

- inspect the silt fence periodically and after each storm event.
- if fence fabric tears, starts to decompose, or in any way becomes ineffective, replace the affected portion immediately.
- remove deposited sediment when it reaches half the height of the fence at its lowest point or is causing the fabric to bulge.
- take care to avoid undermining the fence during clean out.
- after the contributing drainage area has been stabilized, remove the fence and sediment deposits, bring the disturbed area to grade, and stabilize. temporary sediment trap maintenance requirements
- inspect temporary sediment traps after each storm event and immediately repair any erosion and piping holes.
- remove sediment when it has accumulated to one-half the design depth.
- replace spillway gravel facing if clogged.
- inspect vegetation, and re-seed if necessary.
- check the spillway depth periodically to ensure a minimum of 1.5 ft. depth from the lowest point of the settled embankment to highest point of the spillway crest, and fill any low areas to maintain design elevation.
- 6. promptly replace any displaced riprap, being careful that no stones in the spillway are above design grade.
- after all disturbed areas have been stabilized, remove the structure and sediment, smooth the site to blend with adjoining areas, and stabilize.

EROSION CONTROL BLANKET (SURFACE APPLIED)

- During vegetative establishment, inspect after storm events for any erosion.
- if any area shows erosion, pull back that portion of the blanket covering it, add soil, re-seed the area, and re-lay and staple the blanket. after vegetative establishment, check the treated area periodically. temporary gravel
- construction entrance maintenance requirements inspect entrance pad and sediment disposal area weekly and after storm events or
- heavy use. reshape pad as needed for drainage and runoff control.
- topdress with clean stone as needed. immediately remove mud and sediment tracked or washed onto public roads 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.

B12 - PLANNED CONSTRUCTION SEQUENCE THAT DESCRIBES THE IMPLEMENTATION OF STORMWATER QUALITY MEASURES IN RELATION TO LAND DISTURBANCE

step # 1: contractor to setup pre-construction meeting with the ms4 coordinator prior to construction. contractor to install construction staging area, place perimeter silt fence, existing inlet sediment protection, stable construction entrance prior to the pre-con meeting (1 week prior to the start of construction).

step # 2: overall earth work shall begin the second week of construction, including removing the existing surface preparing the building pad. temporary seed all disturbed areas if construction activities are not anticipated within ten days after initial disturbance. (throughout the duration of the project)

step # 3: construction of storm sewer, sanitary lateral, and utilities may begin install inlet sediment barriers upon construction of inlets. An excavated drop inlet shall be placed until inlets have pavement around them and sediment barriers can be placed (within one month of construction).once the aquaswirl water quality units have been placed the units must be protected from construction phse sediment runoff. The units must be monitored and maintained as outlined in the post construction stormwater pollution prevention plan.

step # 4: contractor shall temporary seed any disturbed areas during construction of storm sewer, sanitary sewer, utilities or roadways (throughout the duration of the project)

step # 5: finish grade slopes, & mounds. seed all areas as noted, and install erosion control blanketing where noted.

step # 6: complete drive aisles/parking areas. install pavement area inlet protection.

step # 7: construct building and final grade of landscape areas.

step # 8: install landscaping and final seeding. submit to IDEM Notice of Termination.

Note: install temporary seeding after a specific stage of construction has been completed (temporary or final) where areas will be idle of construction activities for a period of 15 days or more.

B13 - Erosion and sediment control on individual residential building lots

B14 & B15 - Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1:

Expected materials that may appear at the site due to construction activities include, but are not limited to petroleum products, fertilizers, paint and solvents, and concrete. Materials shall be stored in the designated material storage area.

Spill prevention for vehicle and equipment fueling shall conform to the following practices: 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. Implementation: Use offsite fueling stations as much as possible. 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 pads 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 area. 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.

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 soils

Spill prevention for solid waste shall conform to the following practices: 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. Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures, and building construction. Packaging 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 parts, Styrofoam and other package construction materials. 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 (sued oils, solvents and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designed 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. Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding. Inspect construction waste area regularly. Arrange for regular waste collection.

Spill prevention for concrete washout shall conform to the following practices: Store dry and wet materials under cover, away from drainage areas. Avoid mixing excess amounts of fresh concrete. Perform washout of concrete trucks offsite or in designated areas only. Do not wash out concrete trucks into storm drains, open ditches, streets, or streams. Do not allow excess concrete to be duped onsite, except in designated areas. Locate washout areas at least 50 ft from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste. Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly. Avoid creating runoff by draining water to a bermed or level area when washing concrete to remove fine particles and expose the aggregate. Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose in the trash.

The cleanup parameters shall conform to the following practices: The developer / homeowners association shall be continually kept informed, maintain lists of qualified contractors and available Vac-trucks, tank pumpers and other equipment readily accessible for cleanup operations. In addition, a continually updated list of available absorbent materials and cleanup supplies should be kept on site. 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 alteration to this plan. When spills occur which could endanger human life and this become primary concern, the discharge of the life saving protection function will be carried out by the local police and fire departments. 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. Flushing of spilled material with water will not be permitted unless so authorized by the Indiana Department of Environmental Management.

Spill prevention for vehicle and equipment maintenance shall conform to the following practices: 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. These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles. 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 by done in conjunction with a stabilized construction entrance / exit. Out door 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). 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 water courses. Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over and 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. Deep vehicles and equipment clean; do not allow excessive buildup 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.

B14 & B15 - Cont.

Train employees and subcontractors in proper maintenance and spill cleanup procedures. Drip pans or plastic sheeting should by placed under all vehicles and equipment placed on docks, barges, 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. Properly dispose of or recycle used batteries. Do not place used oil in a dumpster or pour into a storm drain or water course. Properly dispose of used oils, fluids, lubricants, and spill cleanup materials. Don not bury tires. Repair leaks of fluids and oil immediately.

Spill prevention for fertilizers shall conform to the following practices: Fertilizer's used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

Spill prevention for paint and solvents shall conform to the following practices: All containers will be tightly sealed and stored when not required for use. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM but will be properly disposed of according to manufacturers' instructions or State or local regulations.

Spill prevention and cleanup shall conform to IDEM form 327 IAC 2-6 and the IDEM Spill Response Center (888-233-7745) shall be contacted in the case of a material spill occurring.

C1 - DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE

The final land use for the site will be to support office / warehouse space. Potential pollutant sources that may appear at the site due to proposed land use activities, but are not limited to vehicles, exposed soil and trash. Potential pollutants include, but are not limited to oil, grease, antifreeze, brake fluid, brake dust, rubber fragments, gasoline, diesel fuel and other hydrocarbons, metals from vehicular and other sources, grit (sediment) from wearing of the road surface and falling or washing off of vehicles, trash (including bacteria and other biological agents contained in the trash) from littering and other types of improper disposal or storage, and elevated receiving water temperatures from stormwater run-off contact with impervious surfaces.

C2 - DESCRIPTION OF PROPOSED POST-CONSTRUCTION STORMWATER MEASURES

Permanent seeding must be established prior to construction cessation. Healthy turf can help filter stormwater and encourage settlement of suspended solids prior to travel offsite.

C4 - SEQUENCE DESCRIBING STORMWATER MEASURE IMPLEMENTATION After final landscaping and seeding and the completion of all construction activities, it is the responsibility of the Contractor/Responsible entity to remove any trash or sedimentation from the site.

C5 - MAINTENANCE GUIDELINES FOR PROPOSED POST-CONSTRUCTION STORMWATER MEASURES

The turf grass and landscaping maintenance is not typically critical and is not expected to go beyond typical aesthetic actions.

Any debris in the parking areas should be picked up and placed in the trash receptacle. The parking area shall be kept clean and be swept every 3 months.

Storm Sewer System

Inspect the entrance culvert every 6 months. Evaluate the condition of the system and confirm no riprap failures, no evidence of non-stormwater discharges or excessive sedimentation. Inspect and clean the system once annually. Call a local company to remove sediments, oil, and other floatable pollutants as required. Dispose of all waste in accordance with federal, state and local requirements. Water and sediment from cleaning procedures should NOT be dumped into a sanitary sewer.

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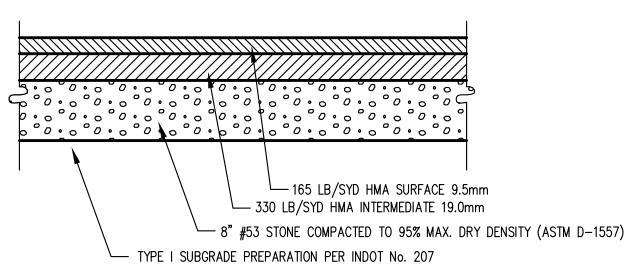
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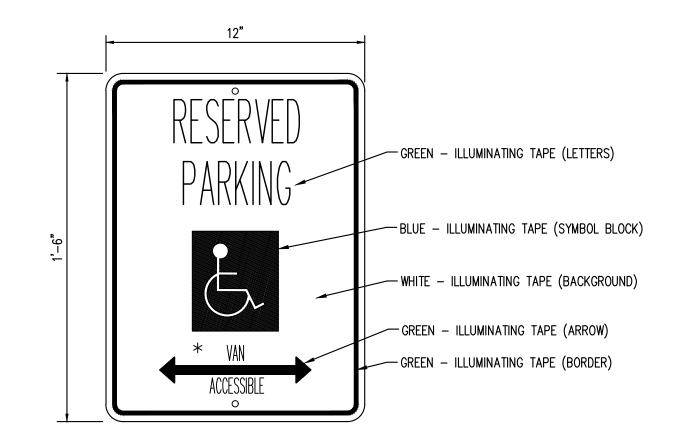
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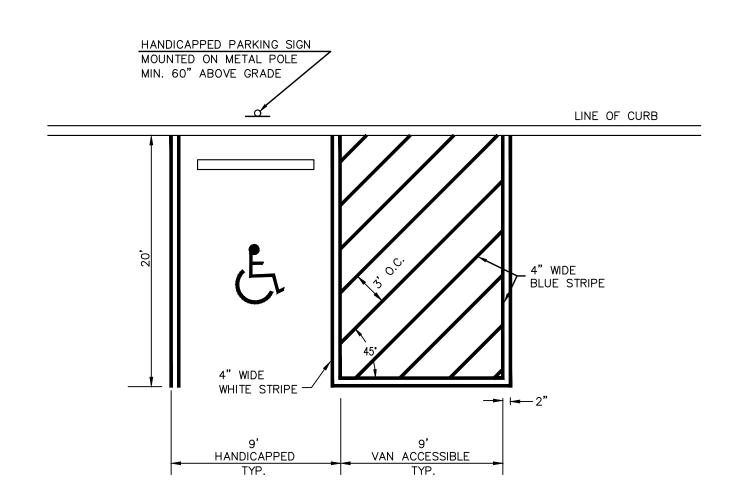
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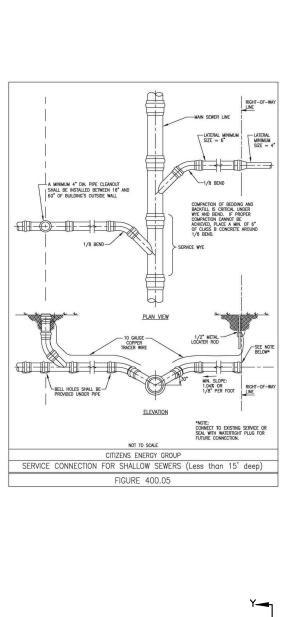
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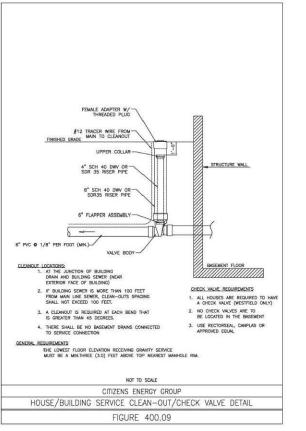
HANDICAP PARKING SIGN DETAIL







Groove (or tongue) to
be the same as on standard
reinforced concrete pipe
ASTM designation C76
CLASS 'A' CONCRETE
LONGITUDINAL SECTION



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PIPE CULVERT

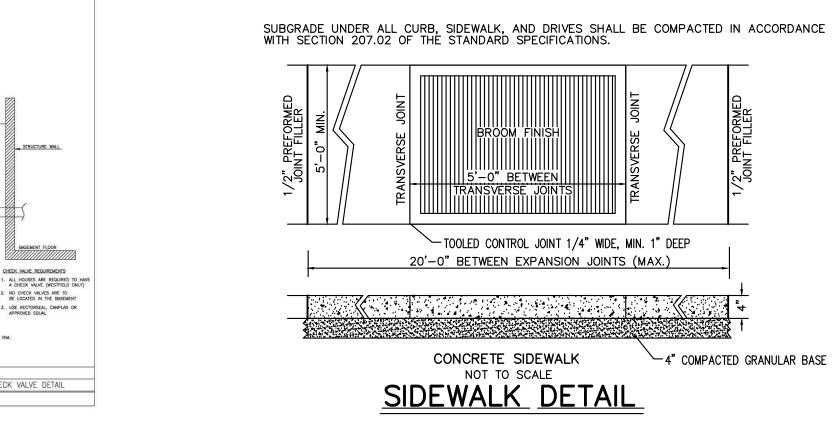
COMPUTED LENGTH OF CULVERT

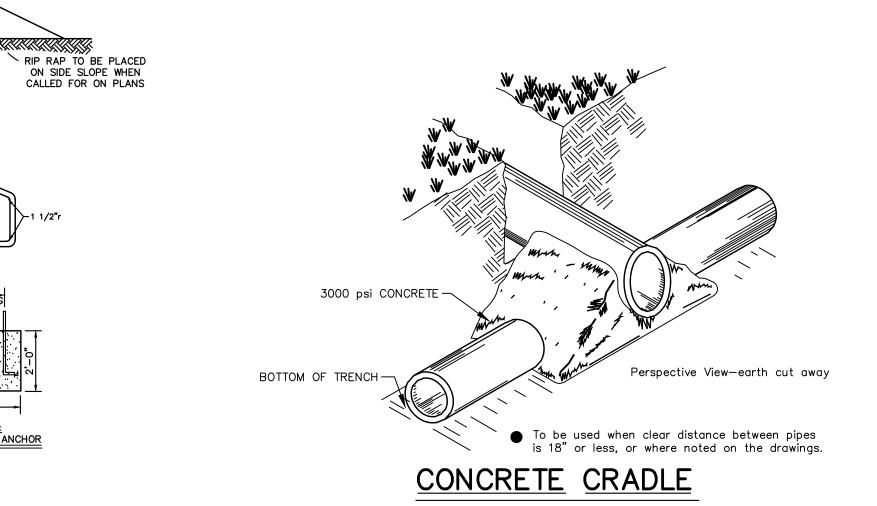
DIMENSIONS OF CONCRETE END SECTIONS FOR ROUND PIPE

PAY LENGTH END SECTION
OF CULVERT LENGTH (D)

SLOPE DETAIL

CONCRETE PIPE TOE ANCHOR





REINFORCED CONCRETE PIPE (RCP)

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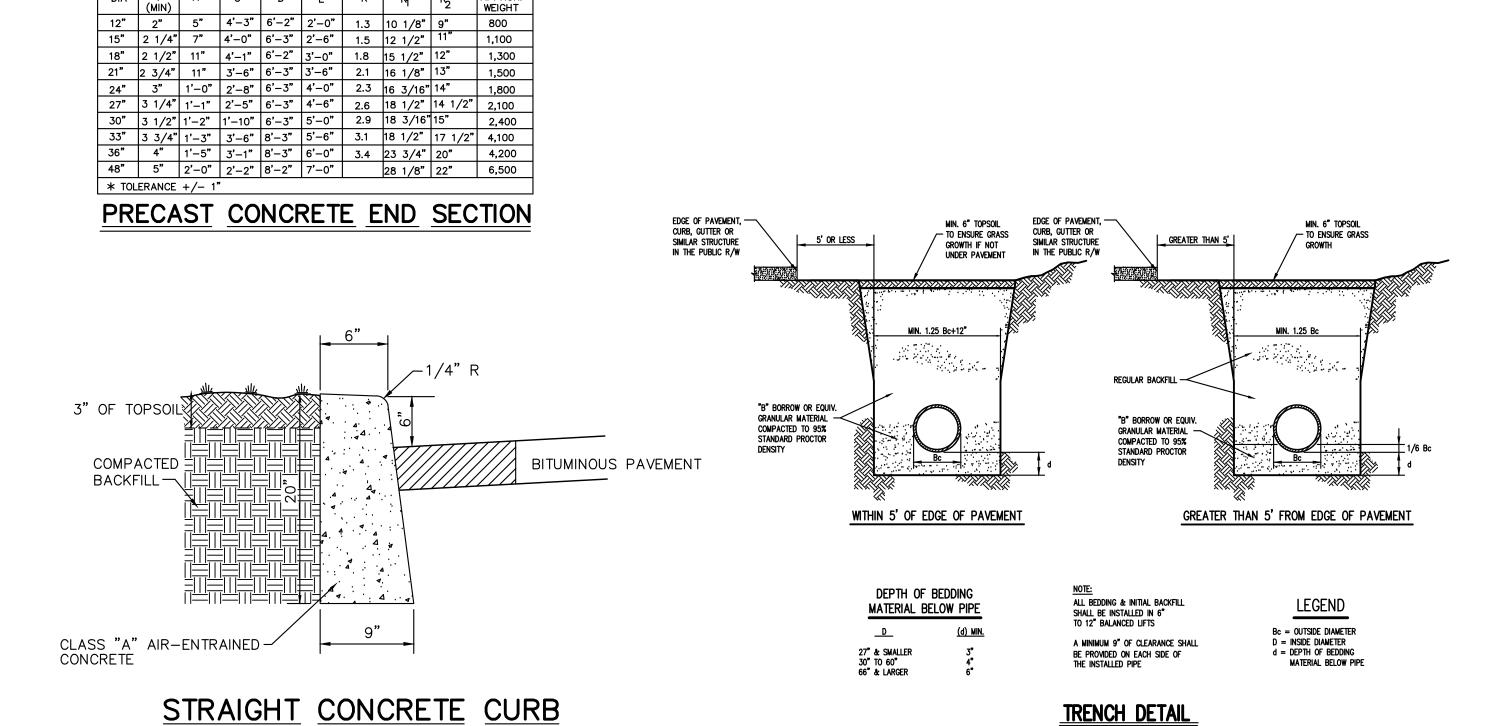
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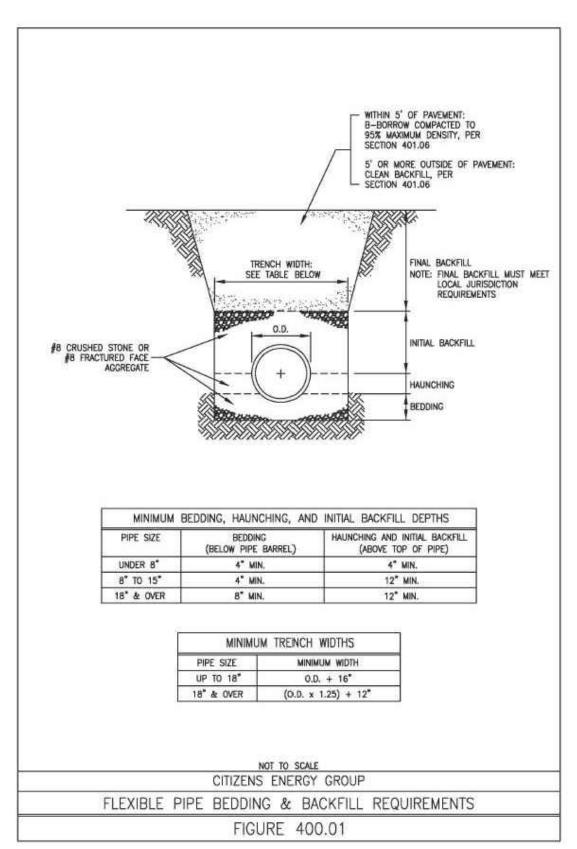
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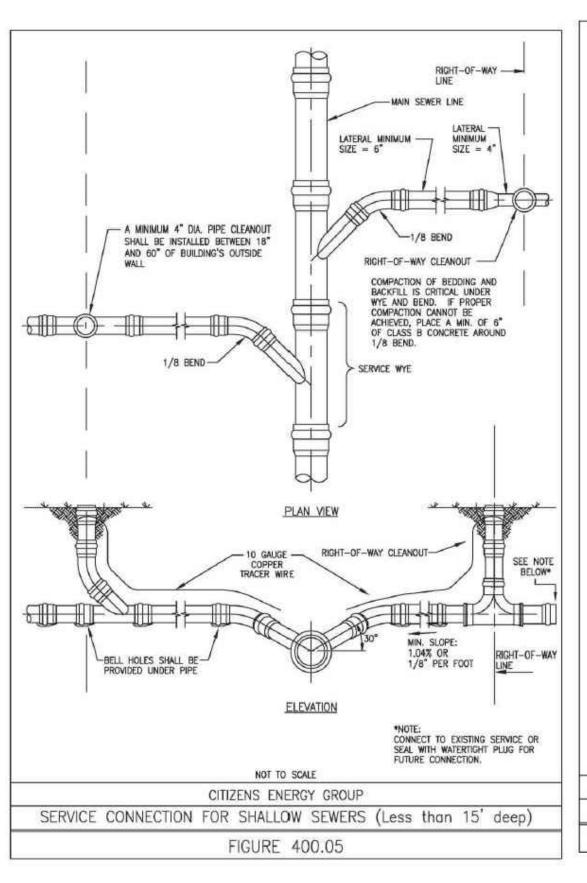
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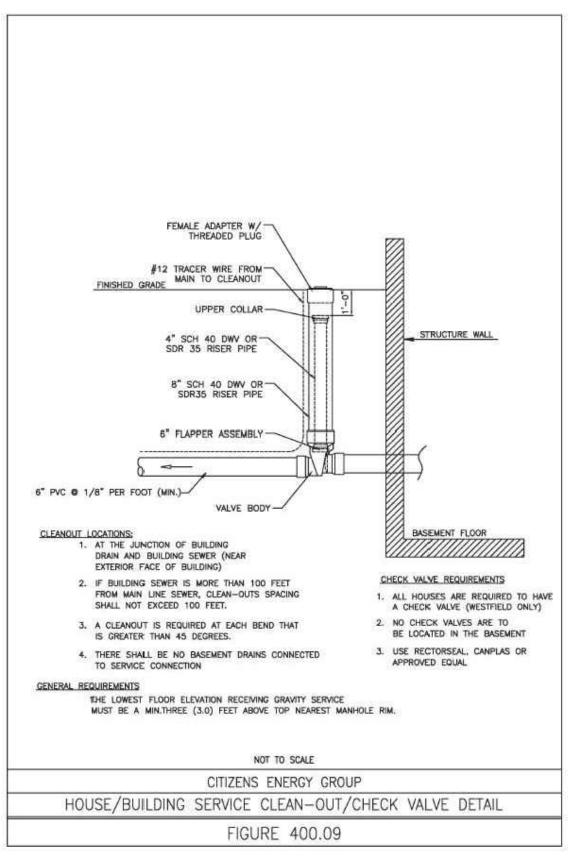
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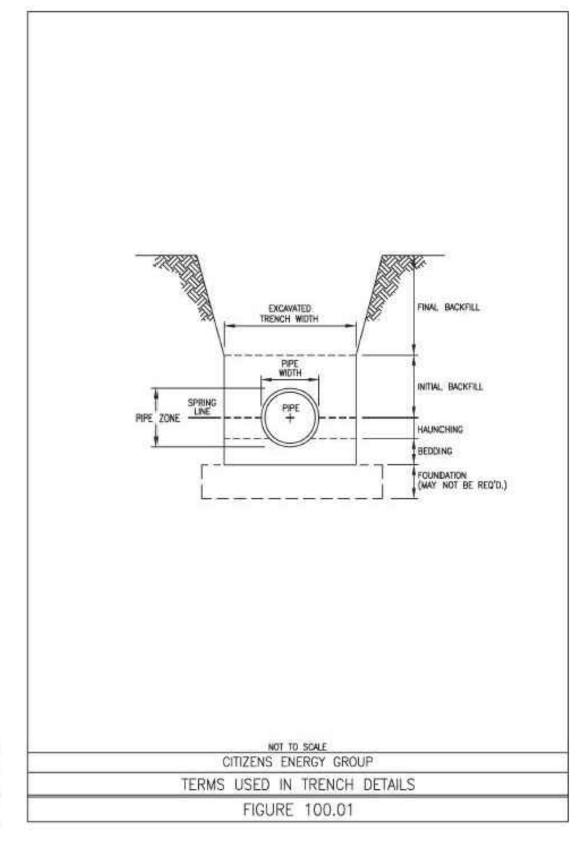
GNERAL

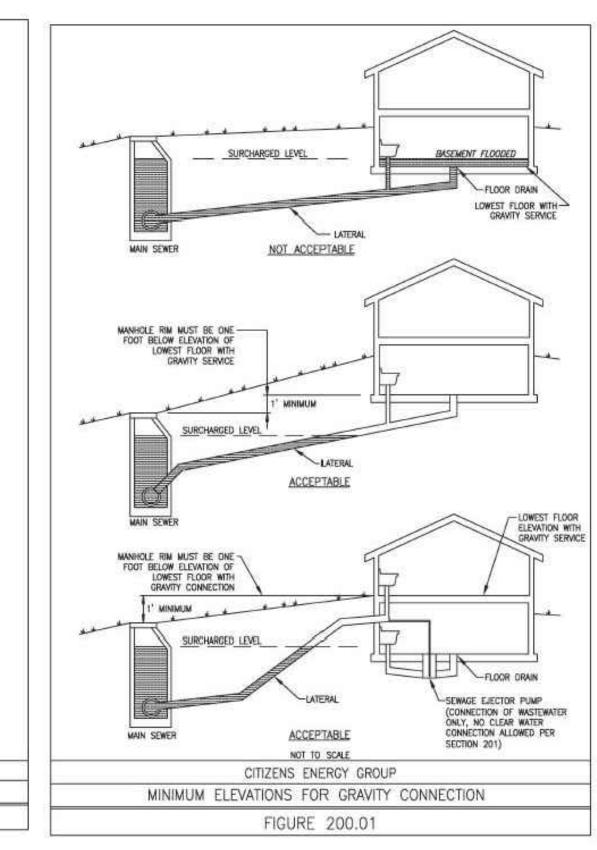


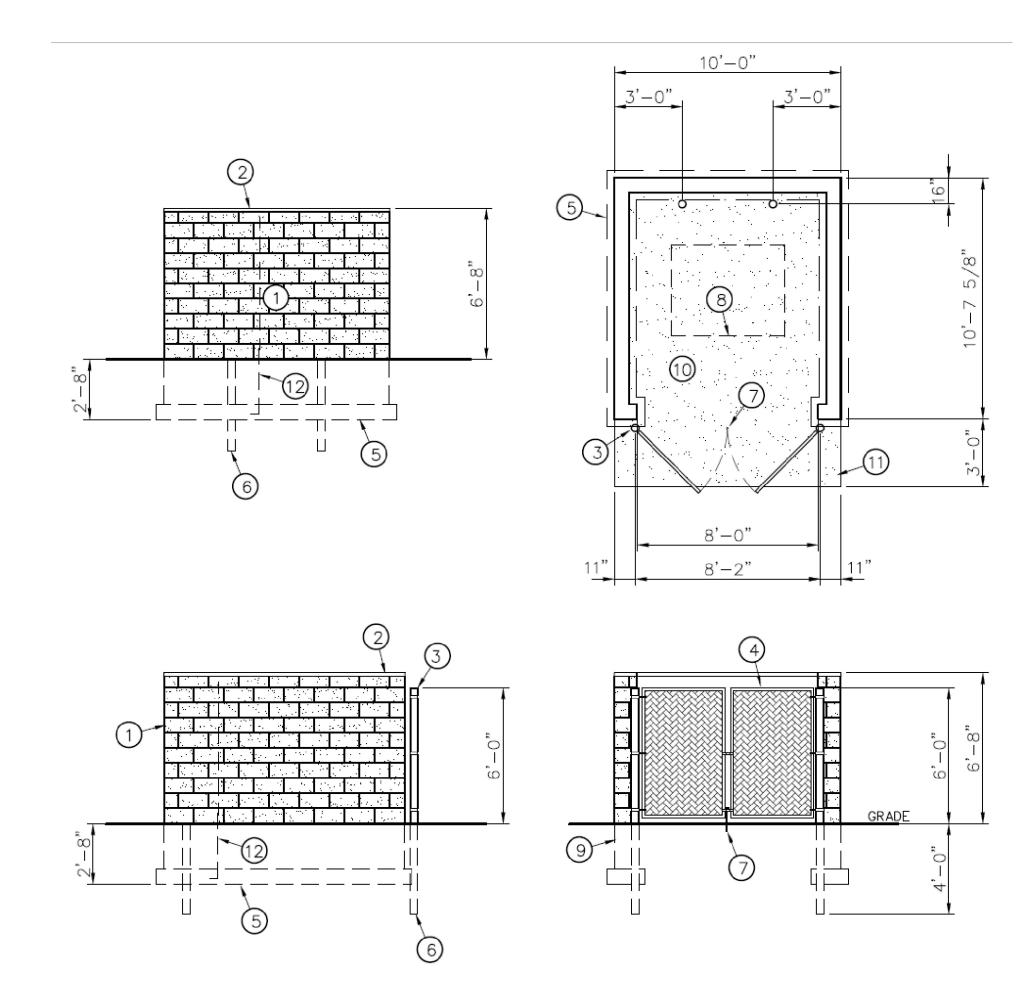












TRASH ENCLOSURE PLAN NOTES:

- PAINTED (2) COATS MIN. WITH (LATEX EXTERIOR PAINT) SPLIT FACED 8x16x8 BLOCK WALL. PROVIDE/INSTALL #4 REBAR AT 32" O.C. HORIZONTALLY AND TIE INTO FOOTING. FOOTING TO HAVE (2) #4 BARS CONTINUOUS 3" OFF OF BOTTOM OF FOOTING @ 8" O.C. WALL TO HAVE LADDER REINFORCING EVERY OTHER COURSE HORIZONTALLY. COLOR PER OWNER.
- PRE-FINISHED ALUMINUM COPING CAP TO FIT 8" BLOCK WITH 1" DRIP ANGLE AND SLOPE TOP TO OUTSIDE/DOWN. SEAL ALL EDGES AND CORNERS WHERE OVERLAP WITH SEALANT. COLOR PER OWNER, OR TO MATCH BUILDING.
- 4"Ø GALVANIZED POST WITH HINGES, LOCKING HASP, PIN AT BOTTOM, AND POST CAPS. DO NOT PAINT. MESH SHALL BE PRE-FINISHED PLASTIC OR APPROVED EQUAL. COLOR PER OWNER.
- 4 GALVANIZED PIPE RAILING/FRAME. DO NOT PAINT. VERIFY WITH OWNER PRIOR TO INSTALL.
- 5 POURED CONCRETE (4,000 PSI) FOOTING WITH REBAR PER NOTE #1.
- 6 IMBED POST INTO GRADE MIN. 48". FILL AROUND WITH CONCRETE MIN. 12"ø (SONO-TUBE).
- DICKING PIN INTO GALVANIZED SLEEVE INTO CONCRETE WITH 1/2" PIN WITH 2" LEG (REBAR)
- 8 DASHED LINE INDICATES DUMPSTER BY OTHERS.
- 9 CONTINUOUS POURED/BLOCK STEM WALL. REFER TO PLAN DIMENSIONS FOR DEPTH. SMOOTH FACED BLOCK. INCLUDE REBAR PER NOTE #1. GROUT FILL CORES AT VERTICAL REBAR.
- 6" POURED CONCRETE SLAB ON 6" COMPACTED GRANULAR FILL WITH FIBER MESH AND (4,000 PSI CONCRETE) SMOOTH FINISH. SLOPE DOWN TOWARD OPENING FOR DRAINAGE.
- (1) CONTINUE SLAB OUT MIN. 36" x FULL WIDTH FOR APRON. NO JOINT. TURN DOWN EDGES 8" WIDE x 12" VERTICALLY. INSTALL ON 6" COMPACTED GRANULAR FILL WITH FIBER MESH REINF.
- 12 TYPICAL EXAMPLE OF VERT. #4 REBAR AT 32" O.C. HORIZONTALLY FULL HEIGHT WITH WIRED SECTIONS. TIE INTO HORIZONTAL REBAR IN BOTTOM OF FOOTING.

MIDLAND REALTY GROUP		Solomen	INDIANAP	Consulting Ph: (317) 590–0658	
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NEW OFFICE/WAREHOUSE BUILDING	FRANKLIN, IN 46131		CNEPAL SITE DETAILS		

DRAWING NUMBER

1. SCOPE OF WORK

- A. 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.
- 1.. 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
- 2. Excavated material that is suitable may be used for fills. All unsuitable material and all surplus excavated material not required shall be removed from the site. The location of dump and length of haul shall be the Contractor's responsibility.
- 3. Provide and place any additional fill material from off the site as may be necessary to produce the grades required. Fill obtained from off site shall be of kind and quality as specified for fills herein and the source approved by the Owner.
- 4. 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.
- B. Work not included: The following items of related work are specified and included in other sections of these specifications:
- 1. Excavation, grading and backfilling for utility lines
- 2. Storm drainage systems
- 3. Sanitary sewer systems
- 4. Streets and paving
- 5. Water supply system

2. BENCH MARKS

Maintain carefully all bench marks, monuments and other other reference points; if disturbed or destroyed, Contractor shall contact engineer. Replacement shall be at Contractor's expense.

3. REMOVAL OF TREES

- A. 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.
- B. All brush, stumps, wood and other refuse from the trees shall be removed to disposal areas off of the site. Disposal by burning shall not be permitted unless proper permits are obtained (where applicable). The location of on-site bury pits shall be approved by the owner and the Engineer if permitted.

PROTECTION OF TREES

A. 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.

5. HANDLING OF TOPSOIL

- A. Remove all organic material from the areas to be occupied by buildings, roads, walks and parking areas. Pile and store topsoil at a location where it will not interfere with construction operations. Topsoil shall be reasonably free from subsoil, debris, weeds, grass, stones, etc..
- B. After completion of site grading and subsurface utility installation, top soil shall be replaced in areas designated on the erosion control plan for seeding and/or sod. Any remaining topsoil shall be used for finished grading around structures and landscaping areas.

- A. Rules and regulations governing the respective utilities shall be observed in executing all
- B. If active utilities are encountered but not shown shown on the drawings, the Engineer shall be advised before work is continued.
- C. 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 Utility Company or the Engineer.
- D. It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall also be the contractors responsibility to contact the owners of the various utilities before work is started.

. SITE GRADING:

- A. Grades: Contractor shall perform all cutting, filling, compacting of fills and rough grading required to bring entire project area to grade as shown on the drawings.
- B. Rough Grading: the tolerance for paved areas shall not exceed 0.10 feet plus or minus above the established subgrade. All other areas shall not exceed 0.10 feet plus or minus the established grade. All banks and other breaks in grade shall be rounded at top and bottom.

C. Compaction Requirements:

- 1. All areas supporting footings and paved areas shall be compacted to at least 95%
- 2. All fill below building slab, adjacent to foundations and over foundations shall be compacted to 93% standard proctor density.

8. EARTH WORK BALANCE

- A. The Contractor shall confirm all earthwork quantities prior to start of construction. If an excess or shortage of earth is encountered, the Contractor shall confirm with the Owner and Engineer the requirements for stockpiling, removal or importing of earth.
- B. Minor adjustments to the grades may be required to earthwork balances when minor excess material or shortages are encountered. It is recognized by the parties hereto that the calculations of the the Engineer in determining earthwork quantities shall be accomplished in accordance with the American Society of Civil Engineers Standards for such calculations. Further, that these calculations are subject to the interpretations of soil borings as the physical limits of the various soil types, the allowable variation in finish grade and compaction permitted the contractor, and that all of these parameters may couse either an excess or shortage of actual earthwork materials to complete the project. If such an actual minor excess or shortage of materials occurs, the contractor shall contact the Engineer to determine if adjustment can be made to correct the imbalance of earth.

9. TESTING

A. Contractor shall hire at Contractors expense an independent soil testing service to assure soil compaction with scope of testing to be approved by Engineer. Copies of test results shall be submitted to the Engineer.

SANITARY SEWER SYSTEMS

SCOPE OF WORK

A. The work under this section includes all sanitary sewers, manholes, cleanouts and related items including excavating and backfilling, necessary to complete the work shown in the drawings, starting five feet outside the building walls. The ends of sewers shall be tightly plugged or capped at the terminal points, adjacent to buildings, pending the connecting of all such lines to the building drain as specified in the plumbing and architectural drawings. One set of "approved" plans shall be on the job site at all times.

A. Polyvinyl Chloride Pipe (PVC)

- 1. 8"-15" PVC pipe shall be SDR 35 and conform to ASTM D3O34, with a minimum cell classification of 12454-B or 12454-C. Greater than 15" PVC pipe shall conform to ASTM F679, with a minimum cell classification of 12454-C.
- 2. All fittings and joints shall be compression type flexible gasketed joints, and manufactured and installed in accordance with the pipe manufacturer's specifications. No solvent cement joints shall be allowed. All fittings shall be heavy walled fittings.
- 3. Pipes shall have a minimum pipe stiffness of 46 psi when measured at 5% vertical ring deflection and tested in accordance with ASTM D 2412 and a minimum tensile strength 34.50 MPa.

Ductile Iron Pipe

- 1. Ductile iron (DI) pipe must meet ASTM A-746 and ANSI/AWWA A21.51/C151 with exterior bituminous coating per ANSI/AWWA A21.51/C151 and ANSI/AWWA A21.10/C110. The interior surfaces of all pipe, fittings, and adapters shall be lined with factory applied Protecto 401 ceramic epoxy lining, or approved equal. Pipe must be marked per ASTM A 746.
- 2. Mechanical, push on or restrained joints shall be provided Flanged joints are not allowed for buried applications. Mechanical joints and accessories shall conform to AWWA C111/ANSI A21.11. The bolts and nuts shall be corrosion resistant high strength alloy steel. Push-on type joints shall conform to ANSI A21.11/AWWA C111. Fittings shall compy with ANISI Specification A21.10/AWWA C110. Restrained joints shall be manufactured in accordance with pipe manufacturers' requirements. Locking rings, tabs, inserts, or gaskets with inset steel grips may all be used for gravity sanitary sewer applications. Fittings shall be standardized for the type of pipe and joint specified, and shall comply with ANSI A21.10/AWWA C110.

Manholes

- 1. Precast reinforced concrete manhole sections and steps and concrete adjusting rings shall conform to ASTM C-478 latest revision. Exterior of manhole shall be waterproofed with Bismatic material. Manhole sections shall not be installed until at least five days after having been cast unless permitted in writing by the Department.
- 2. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well-cleaned by shot-blasting or by some other approved method. They shall be coated with asphalt paint which shall result in a smooth coating, tough and tenacious when cold, not tacky or brittle. They shall be gray iron meeting ASTM A-48 latest revision. Manhole covers for sanitary sewer shall be Neenah Type R-1077-A w/R-1712-B-SP Frame w/Self-Sealing application.
- 3. Joints Manhole sections shall be joined with a rubber gasket per ASTM C 443, and 1/2" diameter butyl rubber rope sealant per ASTM C 990.
- 4. Manholes shall include steps. Manhole steps shall conform to the requirements of ASTM C 478 and be manufactured using steel rods encased in polypropylene plastic. Steps shall be factory installed when the manhole is manufactured.
- Manholes shall be bedded on a granular foundation. The granular foundation shall be compacted with vibratory tamps.
- 6. Manholes adjusting rings shall only be concrete. They shall conform to ASTM C 478. Minimum thickness of concrete ring shall be four (4) inches.
- 7. Castings shall be Neenah R-1713-B-SP or East Jordan 1022-1AGSMD. All castings shall have a machined bearing surface with Type F concealed pickholes. The words "Sanitary Sewer" and "City of Indianapolis" must be cast in recess letters two inches in height onto solid lid covers. Castings shall be manufactured in accordance with ASTM A 48 - Class 35B, and have a minimum tensile strength of 35,000 psi.

3. APPLICATION

- Permits and Codes The intent of this section of the specifications is that the contractor's bid on the work covered herein shall be based upon the drawings and specifications but that the work shall comply with all applicable codes and regulations as amended by any waivers. Contractor shall furnish all bonds necessary to get permits for cuts and connections to existing sewers. The Contractor shall be responsible for obtaining or verifying all permits for all or portions of this project prior to starting construction. The Contractor shall notify the local or county inspector or utility superintendent 48 hours prior to commencement of sanitary construction.
- B. Local Standards The term "local standards" as used herein means the standards of design and construction of the respective municipal department or utility company.
- C. Existing Improvements Maintain in operating condition all active utilities, sewers and other drains encountered in the sewer installation. Repair to the satisfaction of the owner any damage to existing active improvements.
- D. Workmanship To conform to all local, state and national codes and to be approved by all local and state agencies having jurisdiction.
- Trenching Lay all pipe in open trenches, except when the local authority gives written permission for tunneling or jacking of pipe. Open the trench sufficiently ahead of pipe-laying to reveal any obstructions The width of the trench shall be the greater of the outside pipe diameter plus 16 inches or 12 inches plus 1.25 times outside diameter. Sheet and brace the trench as necessary to protect workmen and adjacent structures. All trenching to comply with Occupational Safety and Health Administration Standards. Open trenches shall be properly protected and/or barricaded when left unattended. Keep trenches free from water while construction is in progress. Under no circumstances shall pipe or appurtenances be laid in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.
- F. Special Supports Whenever, in the opinion of the Engineer, the soil at or below the pipe grade is unsuitable for supporting sewers and appurtenances specified in this section, such special support, in addition to those shown or specified, shall be provided as the Engineer may direct, and the contract will be adjusted.
- G. Backfilling No. 8 crushed stone or No. 8 fractured faced aggregate shall be used. Bedding material shall be placed and compacted prior to laying the pipe. Haunching material shall be shovel sliced or otherwise carefully placed and "walked" or

hand tamped to the springline to ensure compaction and complete filling of all voids. The initial backfill shall be added in six inch lifts "walked" in for compaction. Material Pipe size (in) Depth Below Depth Above Top

of Pipe, (in)

Flexible	6 or less	4	4
Pipe	8 to 15	4	12
	18 and larger	8	12
Material	Pipe size (in)	Depth Below	Depth Above

"Regulations For Cuts Within The Public Right-of-Way."

Barrel, (in)

Final Backfill - For excavation within the right-of-ways, final backfill requirements shall be in accordance with the Department of Metropolitan Developments

All other backfill requirements are as follows:

8 to 16

18 and larger

Within 5' of pavement, curbs, gutters, or similar structures trenches shall be backfilled with Structural "B-Borrow" for structural installations per INDOT Standard Specifications - Section 211.

Backfill shall be compacted to achieve not less than 95% Standard Proctor Dry Density per INDOT Section 203.23.

Backfill shall be added and compacted in 12 in. lifts by mechanical tampers. Maximum compaction depth shall not exceed 6 ft.

Backfill outside of 5' of edge of pavement, curbs, gutter or similar structures shall be backfilled with clean fill material free of rocks larger than 6 in. in diameter, frozen lumps of soil, wood, or other extaneous material.

- H. Flow Channels The flow channels within manholes shall be an integral part of the precast base. The channels shall be shaped and formed for a clean transition with proper hydraulics to allow the smooth conveyance of flow through the manhole. The bench wall shall be formed to the crown of the inlet and outlet pipes to form a "U" shaped channel. The bench wall shall slope back from the crown at 1/2 inch per foot to the manhole wall. No brick, rock or sand fillers will be allowed.
- Infiltration The contractor shall furnish necessary equipment to test sewers for infiltration. Infiltration rates shall not exceed the Local Standards. All sanitary sewer lines upon completion will be required to pass a low pressure air test, unless otherwise directed by the City Engineer. Said test shall be conducted according to NCPI Standard Method, and shall be witnessed by an inspector authorized by the City Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe per mile of sewer in 24 hours and is inclusive of all appurtenances within the section being tested such as manholes, house connections, etc. Any portions not passing said tests for acceptance shall be repaired or replaced, including re-excavation and backfill, at the Contractor's expense.
- J. Flushing Sewers Flush all sanitary sewers except building sewers with water to obtain free flow through each line. Remove all silt and trash from appurtenances just prior to acceptance of work.
- K. Plastic Sewer Pipe Installation Plastic sewer pipe shall be installed in accordance with ASTM D2321 per latest revision, and no plastic pipe shall exceed an 11 point mandrel test deflection of 5%. All sewer mains shall be lamped at the time the mandrel test is conducted. All mains shall be true to alignment and grade.
- L. Storm Water Connections No roof drains, footing drains and/or surface water drains may be connected to the sanitary sewer systems, including temporary connections during construction.
- M. Waterline Crossing Water and sewer line crossings and separations shall be in accordance with Ten States Standards and local and state codes. Waterlines and sanitary sewers shall maintain a minimum of 10 foot horizontal separation and a minimum 18 inches of clearance between pipes at crossings. Otherwise, sanitary sewer within 10 feet of waterlines shall be constructed of water works grade Ductile Iron Pipe with mechanical joints and fittings. One length of sewer pipe should be centered at the waterline crossing so that no joint is closer than 10 feet to the waterline.
- N. Utilities It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall also be the contractors responsibility to contact the owners of the various utilities before work is started. The contractor shall notify in writing the owners and the engineer of any changes, errors or omissions found on these plans or in the field before work is started or resumed.
- O. Service Laterals Individual building service lines shall be 6 inches in diameter and of PVC material. Material requirements are in the table below.

Material	Designation	Classification	n
PVC	ASTM D 3034	SDR35	CELL CLASS 12454 OR 12364
PVC	ASTM D 2241	SDR32.5	CELL CLASS 12454
PVC	ASTM D 2466	Schedule 40	CELL CLASS 12454
PVC	ASTM D 2467	Schedule 80	CELL CLASS 12454

Service lines shall be connected to the main sewer by a wye at locations generally shown within these plans. Service lines shall be extended to a distance of 5 feet beyond the right- of-way line and within 5'-8' of the existing ground surface. The ends shall be plugged and sealed with a water tight cap. Sewer service lines shall be marked with a 2"x4" painted green and extending from the lateral end to 3' above grade.

P. New Sanitary Sewer Main Construction - Contractor shall record length and dimensions of each service line stub from nearest downstream manhole measure along the sanitary sewer main. The locations of manholes and service lines along with any other construction changes are to be incorporated on the original construction drawings as "as-built" locations and submitted to the Engineer as soon after completion of construction as possible, not to exceed 30 days. Q. Gravity Sanitary Sewer Testing - All sanitary sewers 24 inches and less shall be air tested by means of a low pressure air test per Citizens Sanitary Sewer Standards.

All sewers larger than 24 inches shall be joint tested per Section 602.04.

All sewers 24 inches and less shall be tested by means of a low-pressure air test to detect damaged piping and/or improper jointing. Testing shall be done per ASTM F 1417 flexible and semi-rigid pipe and ASTM C 924 for RCP.

pressure. All joints shall be tested. Testing shall be per ASTM C 1103 and per City of Franklin Sanitary Sewer Standards and Specifications. R. Force Main Testing - All force mains for lift stations and common force mains

All sewers greater than 24 inches shall be joint tested using air or water under low

- in low pressure systems shall be tested for leakage by a Hydrostatic Leak Test per Section 603.03. The hydrostatic leak test shall be done in accordance with AWWA standards based on
- force main material, in accordance with ASTM E 1003 and per Section 603.03. S. Manhole Testing - All manholes shall be tested for infiltration by means of a

negative air (vacuum) pressure test per City of Franklin Sanitary Specifications.

- All manholes shall be tested for infiltration by means of a Negative Air (Vacuum) Pressure Test. Testing shall be done per ASTM C 1244.
- All internal chimney seals shall be tested using a leakage test. Testing shall be performed

STORM SEWER SYSTEMS

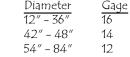
SCOPE OF WORK

The work under this section includes all storm sewers, storm water inlets, and related items, including excavating and backfilling, necessary to complete the work shown on the drawings. All work and materials shall meet the local governing authorities specifications.

2. MATERIALS

A. Storm Sewers

- 1. Reinforced concrete sewer pipe shall conform to ASTM C-76 latest revision, with joints conforming to ASTM C-443 latest revision when storm pipe is continuously submerged in
- 2. Aluminized type 2 corrugated steel pipe shall be manufactured in accordance with AASHTO M36 (type I with 2 2/3" x 1/2" corrugations for 12" and 15" diameters; type IR with 3/4" x 3/4" x 71/2" corrugations for 18" diameter and larger). The pipe shall be formed from an aluminized steel type 2 coil that conforms to AASHTO M274. The minimum gage thickness of the pipe shall be as follows:



- 3. High density polyethylene pipe shall perform to AASHTO M252 and M294 Type S specifications, latest revision, and shall have material specifications conforming to ASTM D1248 or D3350, latest revision.
- 4. Polyvinyl Chloride (PVC) profile wall gravity flow storm sewer pipe shall be the integral wall bell and spigot type with elastomeric seal joints and smooth inner walls in accordance with AASHTO M304. A minimum Cell Class of 12454C or 12364C as set forth by ASTM D 1784 shall be required.
- Smoothwall PVC pip shall be in accordance with ASTM F 679 or AASHTO M 278 for the specified sizes, and shall have a minimum Cell Class of 12364C for pipes meeting specification ASTM F 679, or 12454C for pipes meeting specification AASHTO M 278. Cell class properties shall be set forth by ASTM D 1784.

B. Manholes

- 1. Precast reinforced concrete manhole sections and steps shall conform to ASTM C-478
- 2. Casting shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well cleaned by shot -blasting or by some other approved method. They shall be coated with asphalt paint which shall result in a smooth coating, tough and tenacious when cold, not tacky or brittle. They shall be gray iron meeting ASTM A-48 latest revision.
- 3. Joints Manhole sections shall be jointed with rubber type gaskets. The rubber type gaskets shall meet ASTM C-443 latest revision. When manhole and storm pipe are continuously in water.

1. Perforated plastic pipe subdrains shall conform to ASTM F-405, AASHTO M-252 (4" to 10" pipe).

C. SUBDRAINS

3. APPLICATION A. Permits and Codes - The intent of this section of the specifications is that the contractor's bid on the work covered herein shall be based upon the drawings and specifications but that the work shall comply with all applicable codes and regulations as amended by any waivers. Contractor shall furnish all bonds necessary to get permits for cuts and connections to existing sewers. Contractor shall notify the County Surveyor's Office a minimum of 72 hours prior to the commencement of storm sewer construction.

- B. Local Standards the term "Local Standards" as used herein means the standards of design and construction of the respective municipal department or utility company.
- C. Existing Improvements Maintain in operating condition all active utilities, sewers and other drains encountered in the sewer installation. Repair to the satisfaction of the owner any damage to existing active improvements.

D. Workmanship - To conform to all local, state and national codes and to be approved by all local and state agencies having jurisdiction.

- E. Trenching Lay all pipe in open trenches, except when the local authority gives written permission for tunneling. Open the trench sufficient ahead of pipe laying to reveal any obstructions. The width of the trench shall be the inside pipe diameter plus 24 inches for 12 inches above the pipe. Sheet and brace trench as necessary to protect workmen and adjacent structures. All trenching to comply with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.
- F. Special Supports Whenever in the opinion of the Engineer the soil at or below the pipe grade is unsuitable for supporting sewers and appurtenances specified in this section, such special support, in addition to those shown or specified, shall be provided as the Engineer may direct, and the contract will be adjusted.
- G. Backfilling for a depth of at least 12 inches above the top of the pipe, backfill with earth or granular material free from large stones, rock fragments, roots or sod. Tamp this backfill thoroughly, taking care not to disturb the pipe. For the remaining trench depth, backfill with earth or granular material containing stones or rocks not larger than 4 inches. Backfill under and within 5' of paved areas shall be granular material only and shall conform to local standards - thoroughly compacted by approved methods.
- H. Manhole Inverts Construct manhole flow channels of concrete sewer pipe or brick, smoothly finished and of semicircular section conforming to the inside diameter of the connecting sewers. Make changes in size or grade gradually and changes in direction by true curves. Provide such channels for all connecting sewers at each manhole.
- 1. Subdrains All subdrains shall be of the size shown on the plans and shall be constructed to the grades shown. All drains constructed off-site as part of the outlet drain will be located as
- J. Utilities It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall also be the contractors responsibility to contact the owners of the various utilities before work is started. The contractor shall notify in writing the owners or the engineer of any changes, errors or omissions found on these plans or in the field before work is started or resumed.

STREETS AND PAVING

SCOPE OF WORK

- A. The work required under this section includes all 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 streets, parking areas in contract limits.
 - Curbs and gutters. Sidewalks and concrete slabs, exterior steps.

2. MATERIALS

- A. Concrete Concrete shall be ready-mixed concrete 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 place concrete shall be no less than 1-1/4 inches nor more than 3 inches. Standard test ASTM C-143 shall be used to measure slump. 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. Retempering delivered concrete will not be allowed. Concrete shall be composed of:
- 1. Portland cement Conforming to ASTM C-150, Type IA or Type IIIA.
- 2. Aggregates: Conforming to ASTM C-33
- 3. Water Shall be clear and free from injurious amounts of oils, acids, alkalis, organic materials or other deleterious substances.
- B. Welded Steel Wire Fabric Where required for concrete reinforcement shall conform to ASTM
- C. Premoulded Joint Filler Shall be of non -extruding type meeting ASTM D-544 except that premoulded joint filler used in concrete walk construction may be either non-extruding or resilient.
- D. Bituminous Pavement Materials All materials proposed for the construction of bituminous pavements shall comply with the Indiana Department of Transportation specifications, per latest
- E. Compacted Aggregate Subbase: Shall be crushed stone or gravel. Crushed gravel shall be a minimum of 35% crushed material. Chert 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 be graded as follows:

SIEVE SIZE	% PASSING
1-1/2" 1" 3/4" 1/2" #4 #8 #30 #200	100 80-100 70-90 55-80 35-60 25-50 12-30 5-10

**COMMERCIAL GRADE #53 AGGREGATE MAY BE USED IN PARKING GARAGE.

3. APPLICATION

- A. Grading Do any necessary grading in addition to that performed in accordance with Earthwork Section, to bring subgrades, after final compaction, to the required grades and sections for site improvement.
- B. Preparation of Subgrade Remove spongy and otherwise unsuitable material and replace with stable material. No traffic will be allowed on prepared subgrade prior to paying.
- C. Compaction of Subgrade The first 6 inches below the subgrade shall be compacted to at least 100% of the maximum dry density as determined by the provisions of AASHTO T-99. Water shall be prevented from standing on the compacted subgrade.

D. Compacted Aggregate Subbase – the thickness shown on the drawings is the minimum thickness of

roller weighing 8 to 10 tons. Compact to 95% standard proctor density (ASTM D698) Along curbs, headers and walls and at all placed not accessible to the roller, the aggregate material shall be tamped with mechanical tampers or with approved hand tampers. E. Bituminous Pavement - Hot asphalt concrete pavement shall be as specified in Section 400-410 of

the fully compacted subbase. Compaction shall be accomplished by rolling with a smooth wheeled

during unfavorable weather or when the temperature is not in compliance with section 401.05 of the INDOT Specifications. F. Utility Structures - Check for correct elevation of all manhole covers, valve boxes and similar

structures located within areas to be paved, and make, or have made, any necessary adjustments in such

the Indiana Department of Transportation Specifications latest revisions. Paving will not be permitted

G. Placing Concrete

- 1. Subgrade Place concrete only on a moist, compacted subgrade or base free from loose material. Place no concrete on a muddy or frozen subgrade.
- 2. 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 and coated with form release before placement of
- 3. Placing Concrete Concrete shall be deposited so as to require as little rehandling as practicable. When concrete is to be placed at an atmospheric temperature of 35 degrees F. or less, paragraph 702.10 of the Indiana Department of Transportation Specifications latest revision shall be followed.

H. Concrete Curb

- 1. Expansion Joints Shall be 1/2 inch thick premoulded at ends of all returns and at a maximum
- 2. Contraction Joints Unless otherwise provided, contraction joints shall be sawed joints spaced 20 feet on center. 3. Finish - Tamp and screed concrete as soon as placed, and fill any honey combed places. Finish
- square corners to 1/4" radius and other corners to radii shown.

I. Concrete Walks and Exterior Steps

- 1. Slopes Provide 1/4 inch per foot cross slope. Make adjustments in slopes at walk intersections as necessary to provide proper drainage.
- 2. Dimensions Walks and steps shall be one course construction and of widths and details shown on the drawings.
- 3. Finish Screed 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 5 foot spacing. Provide 1/2" expansion joints where sidewalks intersect, and at a maximum spacing of 48 feet between expansion joints.

in Section 501.17 of the Indiana Department of Transportation Specifications, latest revision.

J. Curing Concrete - Except as otherwise specified, cure all concrete by one of the methods described

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PROJECT NUMBER 22-101

DRAWING NUMBER C901 SHEET || OF 12

LANDSCAPE SPECIFICATIONS

These specifications cover the furnishing of labor, plants, equipment, and materials to perform landscape operations in connection with this construction project at the locations shown on the landscape drawina.

LANDSCAPE MATERIALS:

FERTILIZER: Granular non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer, 20% nitrogen, 10% phosphoric acid, and 5% potash by weight or similarly approved composition.

PLANTING BACKFILL SOIL: Backfill plant pits with the following topsoil fertilizer are on site for planting operations.

<u>PLANT MATERIALS:</u> Provide trees and shrubs as indicated. Comply

PLANTING BED MULCH: 3 inches of Premium grade shredded hardwood mulch (Dark Tan in color) over pre-emergent weed control granules.

PROJECT EXECUTION:

SUBSURFACE UTILITIES: Contractor shall determine utility line locations prior to commencing work. Any conflicts between utility locations, excavation and/or landscape operations shall be brought to Owner's attention prior to commencing excavation and/or grading work. Contractor assumes responsibility for any utility damage resulting from landscape operations. CONTRACTOR SHALL NOTIFY UTILITY LOCATE SERVICE (1-800-382-5544) A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION.

PLANTING EXCAVATION: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage or obstructions, notify owner before planting. See planting details for planting, pruning and staking requirements. All plant beds including tree rings found in lawn areas shall have a 4" spade edge, NO

SEEDED LAWN: Complete all other landscape plantings, mulching and staking prior to seeding lawn areas. Apply fertilizer at a rate equal to 4 pounds of actual nitrogen per 1,000 square feet. Spread topsoil over lawn areas to a depth of two inches prior to seed bed preparation. Cultivate soil to a depth of three inches prior to seeding. Seed bed shall be in a firm but uncompacted condition with a relatively fine texture at time of seeding. Apply Warren's Turf Type Tall Fescue, Frontrunner, or equivalent, at the rate of 7 pounds per 1,000 square feet. Spread weed and seed free straw uniformly over seeded areas and secure to place with emulsified tackifier. Contractor shall maintain seeded lawn for a period of 60 days beyond final acceptance by mowing and watering as required to

PROJECT WARRANTY: Contractor shall warrant trees, shrubs, and plants for a period of one year after date of substantial completion against defects including death and unsatisfactory growth, except for defects resulting from neglect by the Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond installer's control. Remove and replace trees, shrubs or other plants found to be dead or in unhealthy condition during warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period.

LANDSCAPE NOTES

All species of plant materials and substitutions thereof are subject to acceptance by the City of Indianapolis Planning Department approval and of the Owner(s) or a representative of the Owner(s).

All plant materials are to be warranted for a period of no less than one year from final acceptance by the Owner(s) or a representative of the Owner(s).

All plant material is to be planted in a manner that ensures its survival. Any environmental or other type of situation that is noted by the landscape Contractor that could potentially injure the plant or shorten its longevity is to be made known to the Owner(s) and potential substitutions or corrections to the situation can be made at no expense to the Contractor.

All materials failing the one year warantee period are to be replaced at the expense of the Landscape Contractor.

Any deviation from responsible landscape practices and the City of Indianapolis Zoning Ordinance will result in the immediate termination of the Landscape Contract and the Contractor will pay all costs associated with the corrections.

All plant material is to come from respectable sources within 100 miles of the site on which it is being installed. If no source for a plant species is available within this area, Landscape project Architect/Engineer is to be notified immediately to make a determination of possible options.

All plant material is subject to approval by the project Landscape Architect/Engineer prior to installation and may be rejected for reasons of health, aesthetics, size or other reasonable causes.

Contractor is The Landscape responsible for the timely installation of all material in his contract. Should there be a delay due to weather or other unforseeable, natural circumstances, the timeline will be



ASSUMED NORTH SCALE: 1"= 20

mixture: 1 part topsoil, 1 part soil amendment and 1 part soil from excavation. Topsoil: ASTM D5268, PH Range of 5.5 to 7, MIN. 4 percent organic material, free of stones 1 inch and larger. Soil Amendment: Sphagnum peat moss or EPA rated class IV compost. Prepare planting backfill soil on site. Notify landscape architect one week prior to commencing planting to arrange site inspection to conform sufficient quantities of imported topsoil, compost and

with sizing and grading standards of "American Standard for Nursery Stock". Provide only sound, healthy vigorous plants free from defects, disfiguring knots, sun scold injuries, frost cracks, plant diseases, inspects or any other form of disease or infestation. All plants shall have fully developed form without voids or open spaces.

maintain vigorous growth during establishment period.

LANDSCAPE MATERIAL SCHEDULE **Botanical Name** Common Name Size Cond. B & B 2.5" cal. ACER RUBRUM ARMSTRONG MED MAPLE 2.5" cal. B & B GLEDITZIA TRIACANTHOS INERM MAJESTIC HONEYLOCUST REFER TO THE EROSION CONTROL PLAN FOR ALL LAWN AREA TREATMENTS.

Required % Open Area Required Yard Area (sf) Trees Provided 0.15 Site Interior Plantings Trees Provided Frontage Length (ft) Parking Lot Perimeter Paved Surface Area (sf) 5% Island Req. (sf) Trees Provided 1025 Parking Lot Interior 20500



