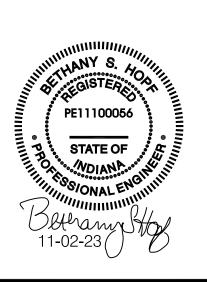
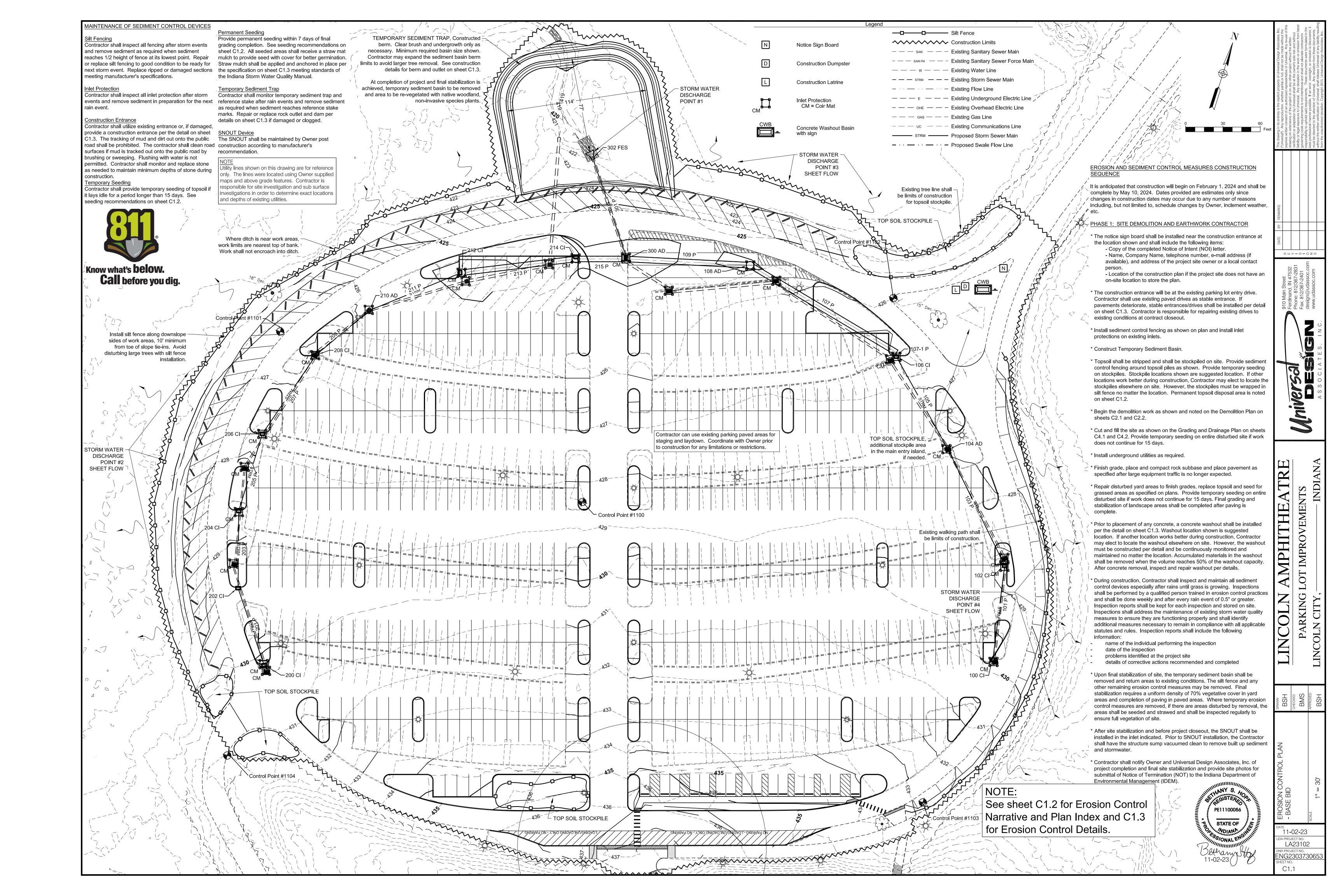
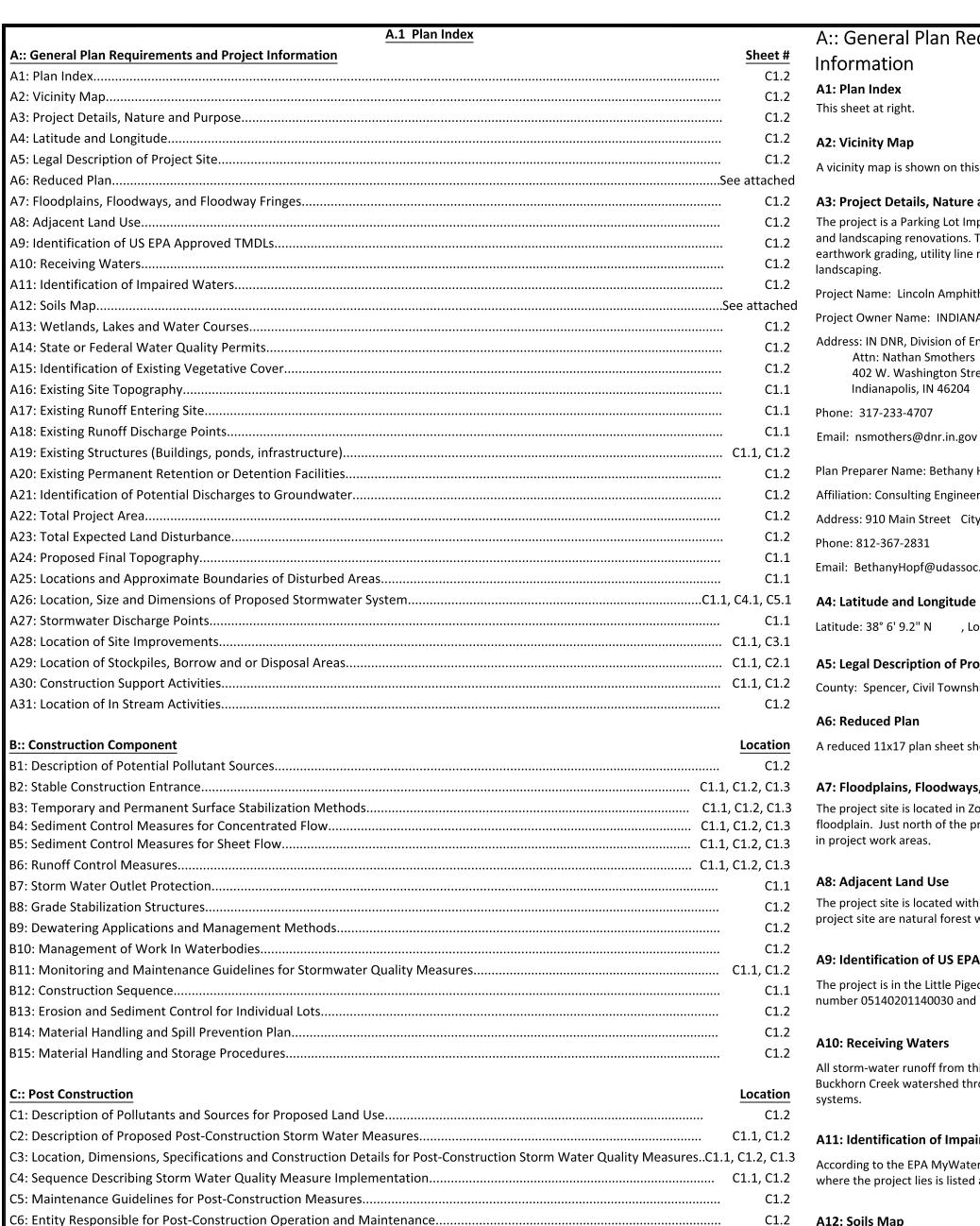
SHEET SCHEDULE				
SHEET NO.	DESCRIPTION			
C0.1	TITLE SHEET			
C1.1 C1.2 C1.3	EROSION CONTROL PLAN - BASE BID EROSION CONTROL NARRATIVE - BASE BID EROSION CONTROL DETAILS - BASE BID			
C2.1 C2.2	DEMOLITION PLAN - BASE BID DEMOLITION PLAN - ALTERNATES			
C3.1 C3.2 C3.3	SITE PLAN - BASE BID SITE PLAN - ALTERNATES DETAIL ADA PLAN - BASE BID			
C4.1 C4.2	GRADING PLAN - BASE BID GRADING PLAN - ALTERNATES			
C5.1 C5.2	UTILITY PLAN - BASE BID LIGHTING AND PHOTOMETRIC PLAN - BASE BID			
C6.1	SITE DETAILS - BASE BID			
C7.1	SITE LANDSCAPING PLAN - BASE BID			

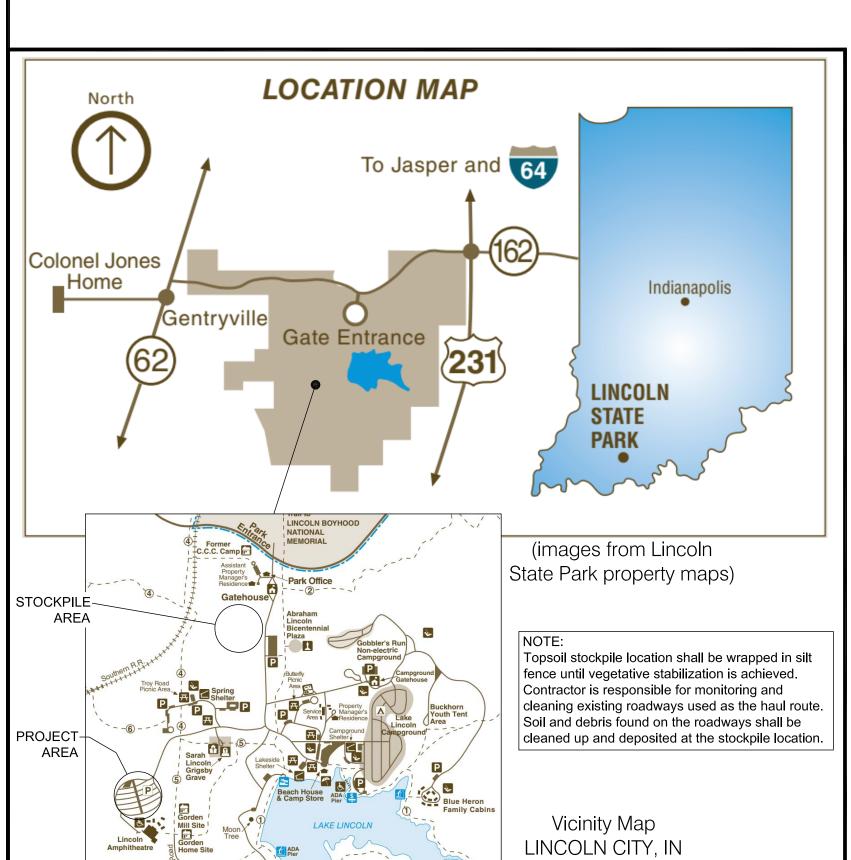
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SPENCER COUNTY

A:: General Plan Requirements and Project Information

A1: Plan Index

This sheet at right.

A2: Vicinity Map

A3: Project Details, Nature and Purpose

The project is a Parking Lot Improvement/renovation project with associated utility and landscaping renovations. The project will require demolition, clearing, earthwork grading, utility line relocation and connections, new paving, and

Project Name: Lincoln Amphitheater Improvements - Phase 2 (Parking Lot) Project Owner Name: INDIANA DEPARTMENT OF NATURAL RESOURCES

Address: IN DNR, Division of Engineering Attn: Nathan Smothers 402 W. Washington Street, Room W-299

Indianapolis, IN 46204 Phone: 317-233-4707

Plan Preparer Name: Bethany Hopf, P.E., Universal Design Associates, Inc. Affiliation: Consulting Engineer

Address: 910 Main Street City: Ferdinand State: IN Zip: 47532

Phone: 812-367-2831 Fax: 812-367-2401 Email: BethanyHopf@udassoc.com

....C1.1, C4.1, C5.1 **A4: Latitude and Longitude** 

Latitude: 38° 6' 9.2" N , Longitude: 87° 1' 17.5" W

... C1.1, C2.1 A5: Legal Description of Project Site

County: Spencer, Civil Township: Clay, Section: NE  $\frac{1}{4}$ , Sec 7, T 5 S, R 5 W

A6: Reduced Plan

A reduced 11x17 plan sheet showing the project is attached.

A7: Floodplains, Floodways, and Floodway Fringes

The project site is located in Zone X, an area outside of the 0.2% chance in project work areas.

The project site is located within Lincoln State Park. The areas surrounding the project site are natural forest within the state park.

A9: Identification of US EPA Approved TMDLs

The project is in the Little Pigeon Creek - Buckhorn Creek watershed with a HUC-14 number 05140201140030 and is not listed in the TMDL report.

A10: Receiving Waters

All storm-water runoff from this project site will discharge to Little Pigeon Creek Buckhorn Creek watershed through existing unnamed tributary channels and pipe

A11: Identification of Impaired Waters

According to the EPA MyWaterway website, Little Pigeon Creek - Buckhorn Creek where the project lies is listed as Good Condition in 2022.

A12: Soils Map

The project site contains the following soils according to the NRCS Web Soil Survey:

Ag - Algiers silt loam, frequently flooded, very brief duration

Sn - Stendal silt loam, 0 to 2 percent slopes, frequently flooded, brief duration ZaC3 - Apalona-Zanesville silt loams, 6 to 12 percent slopes, severely eroded Please see the attached soils map with locations and descriptions for reference.

A13: Wetlands, Lakes and Water Courses

According to the National Wetland Inventory Map, the site is not within a wetland. Park, however this ditch is north/northeast of and outside of the project site area and will not be disturbed during this project.

**A14: State or Federal Water Quality Permits** 

No other water quality permits are known to be required.

**A15: Identification of Existing Ground Cover** 

The site is currently an asphalt parking lot area with some grassed islands with a few existing trees in the islands.

A16: Existing Site Topography

Existing site topography with 1' contours are shown on the Erosion Control Plan sheet C1.1 and spot grades are shown on sheets C4.1 and C4.2 Grading Plan.

**A17: Existing Runoff Entering Site** 

The existing parking lot does not receive off-site runoff. The runoff from the higher elevations at the amphitheatre entrance are diverted via grassed swales on the south side of the parking area and flow either east or west then go around the parking lot.

**A18: Existing Runoff Discharge Points** 

The existing site discharges stormwater via sheet flow and pipe flow to the north.

A19: Existing Structures (Buildings, ponds, infrastructure)

There are existing structures in the vicinity, namely the amphitheatre and its associated service buildings. However, none of these buildings are in the project scope or project limits.

**A20: Existing Permanent Retention or Detention Facilities** There are no existing retention or detention facilities.

A21: Identification of Potential Discharges to Groundwater

Storm water may enter the groundwater system through normal methods of soil infiltration, however there are no known existing sinkholes, karst features, wells, or drywells within project limits. There are no wells planned for the project

**A22: Total Project Area** The project is a 6.8 acre area within the larger state park property.

A23: Total Expected Land Disturbance

The entire 6.8 acre project area will be disturbed.

A24: Proposed Final Topography

Proposed final topography with contours and/or spot elevation tags representing final grades are shown on the Grading Plan sheets C4.1 and C4.2.

A25: Locations and Approximate Boundaries of Disturbed Areas See the attached Erosion Control Plan sheet C1.1 for proposed improvements, project boundaries and disturbed area limits of construction.

A26: Location, Size and Dimensions of Proposed Storm Water System The storm water system and sizes are shown on sheets C4.1 and C5.1.

**A27: Storm Water Discharge Points** 

Storm water discharge points are noted on the attached Erosion Control Plan sheet C1.1. All runoff from the project area drains to the north generally via sheet flow shallow concentrated flow and pipe flow.

A28: Location of Site Improvements

The proposed improvements are located on Site Plan sheets C3.1 and C3.2.

A29: Location of Stockpiles, Borrow and or Disposal Areas

All stockpiles are shown on the Erosion Control Plan sheet C1.1. The stockpile location is temporary and will be removed at completion of project. It is expected monitored and maintained regularly as specified on these plans. that the site will generate excess topsoil material to be hauled by the Contractor to the on-site disposal location shown on this sheet and on C2.1 Demolition Plan. The C:: Post Construction disposal site will be required to have silt fence installed and permanent vegetative cover established over the pile prior to Notice of Termination.

**A30: Construction Support Activities** 

Construction support activity locations are noted on the Erosion Control Plan sheet C1.1. Existing paved surfaces shall be utilized as laydown and staging.

A31: Location of In Stream Activities

There are no in stream crossings or activities proposed for this project. There are no areas of wetland disturbance proposed.

B:: Construction Component

**B1: Description of Potential Pollutant Sources** floodplain. Just north of the project site, the Zone A limits are near the site but not A construction project of this nature may have the following pollutants: sediment from storm water runoff, fuels and lubricants from equipment/vehicles, construction waste, concrete washout fluid, wind borne dust, fertilizers from

> Materials storage must comply with sections B14 and B15 of this plan sheet. Contractor must comply with spills reporting requirements on this sheet. Contractor is required to monitor site daily for construction waste clean up and shall provide a construction site dumpster per the construction sequence. Concrete washout shall be provided and monitored as specified on sheets C1.1 and

**B2: Stable Construction Entrance** 

seeding operations.

will access the work areas of the project via the existing roadways. Contractor shall timing provides for the completion of one area of the site before other areas are inspect roads to ensure no dirt or mud is tracked onto public roadways.

**B3: Temporary and Permanent Surface Stabilization Methods** 

Temporary stabilization practices shall be installed if the construction project site, or any significant portion of the site, shall remain idle for a period longer than 15 days. Temporary practices include covering stockpiles, temporary seeding, straw mulching, erosion control blankets, etc. If erosion control blankets are used, blankets shall be wildlife-friendly, net-free, curlex variety as manufactured by American Excelsior Company or equal. Methods shall be appropriate for the season. See specifications for seeding at right.

As soon as new pavement areas are final graded, they shall be covered with stone subbase. All grass areas shall be permanently seeded within 7 days after completion of earthmoving activities and shall be appropriate for the season. See specifications for seeding at right.

B4: Sediment Control Measures for Concentrated Flow

There are no areas of concentrated flow.

Contractor is responsible for determining the need for additional measures beyond provide minimal vegetative filtering of storm water runoff. seeding based on construction site conditions.

**B5: Sediment Control Measures for Sheet Flow** 

There are noted riverine habitats along the outlet ditch for the lake in Lincoln State Silt fencing will be installed as shown on the plan prior to beginning any other work. the inlets & pipes shall be done regularly to determine silt build up and All disturbed lawn areas that have been graded to finished elevations shall be permanently seeded with grass within 7 days after grading completion to prevent sediment runoff. Any areas of pavement subgrade that have been graded to final elevations shall be covered with appropriate stone subbase within 7 days to prevent sediment runoff and stabilize the surface.

**B6: Runoff Control Measures** 

The Contractor is responsible for regularly monitoring the site for erosion. If areas are eroding and flow is becoming concentrated, Contractor shall repair areas of erosion, seed and install erosion control blankets or straw matting, or other measures as needed, to reduce further erosion.

Rock Check Dams or other commercially available check structures shall be installed maintenance guidelines for SNOUT at project closeout. in concentrated flow areas if they develop. Items shall be installed per the Indiana Storm Water Quality Manual or manufacturer's specifications.

**B7: Storm Water Outlet Protection** The storm pipe discharge point shall be as detailed on sheet C5.1 to discharge flow

as in existing conditions. The outlet area shall be rip rap protected as detailed.

**B8: Grade Stabilization Structures** 

No grade stabilization structures are proposed for this project.

**B9: Dewatering Applications and Management Methods** 

Dewatering of excavations is not expected to be needed for the project. If required, Contractor shall use commercially available dewatering sediment filter bags in accordance with manufacturer's specifications to treat pump released

**B10: Management of Work in Waterbodies** 

No stream or wetland activities are required for this project.

**B11: Monitoring and Maintenance Guidelines for Stormwater Quality** 

See the Erosion Control Plan sheet C1.1 for notes about monitoring, maintenance and documentation requirements.

See Erosion Control Plan sheet C1.1 for construction sequence.

**B13: Erosion and Sediment Control for Individual Lots** There are no individual lots for this project.

**B14: Material Handling and Spill Prevention Plan** 

It is expected there will be paints, sealants, adhesives, oils, fuels, fertilizers, concrete washout fluids, and general construction related materials on site. Contractor shall keep on site and strictly adhere to MSDS sheets of all materials, chemicals, and products brought to the site. Fluid materials shall be kept in original sealed containers until ready for use. Leftover fluid materials shall be re-sealed in original containers if possible. If not possible, fluid materials shall be transferred to manufacturer approved containers that can be re-sealed.

Contractor shall adhere to 327 IAC 2-6 for spills, reporting, containment and response. As soon as possible, but within 2 hours of discovery of a spill, Contractor must report the spill to the Department of Environmental Management, Office of Land Quality, Emergency Response Section: 317-233-7745 or 1-888-233-7745. If a written report is requested submit the report to: Indiana Department of Environmental Management, Office of Land Quality, Emergency Response Section (MC 66-30), 2525 N Shadeland Ave, Suite 100, Indianapolis, IN 46219-1787.

**B15: Material Handling and Storage Procedures** 

Contractor shall handle and store all materials on site as listed above and per manufacturer's recommended procedures. Additionally, the site must be checked daily to ensure all construction waste is properly disposed of in the on site construction dumpster provided and maintained by Contractor. Dumpster shall be regularly monitored and emptied and shall not be allowed to overflow. Construction materials shall be stored in a neat and tidy condition and shall not be allowed to blow or disperse on or off the site. Concrete washout shall also be

C1: Description of Pollutants and Sources for Proposed Land Use

Potential pollutants associated with this land use include • Oil, grease, engine coolants, and brake dust from vehicles

 Rubber wearing off tires Trash and debris from littering

• Lawn care chemicals (i.e. weed killers)

Lawn fertilizers

**C2: Description of Proposed Post-Construction Storm Water Measures** 

Areas draining off site by sheet flow will be vegetated for stormwater filtration. The storm water runoff generated by new impervious surfaces will flow to the proposed underground storage pipes as much as possible. The storage area will filter the storm water by providing a condition in which the storm water will slow down and have time to settle out smaller particle suspended solids. Additionally the outlet structure will have a SNOUT BMP installed over the outlet pipe to catch floatable trash and remove sediment.

C3: Location, Dimensions, Specifications and Construction Details for **Post-Construction Storm Water Quality Measures** 

See the Erosion Control Plan sheet C1.1 for location of the proposed SNOUT acting as the primary post-construction measure. Additionally, post-construction sheet flow treatment will occur through grassed yard areas for sheet flow leaving the site without entering the storm system. Permanent seeding shall be installed within 7 days of final grades being established. Contractor shall incrementally install See the Erosion Control Plan sheet C1.1 for entrance location. Construction traffic seeding as portions of the site are completed and ready for seeding if construction completed. Removal of temporary sediment control measures may be done after establishment of vegetative cover.

**C4: Sequence Describing Storm Water Quality Measure Implementation** 

Site inspection and removal of trash and debris shall be done daily to keep the site clean and in good condition. Permanent seeding shall be installed within 7 days of final grades being established. Contractor shall incrementally install seeding as portions of the site are completed and ready for seeding if construction timing provides for the completion of one area of the site before other areas are completed. Removal of temporary sediment control measures may be done after establishment of vegetative cover.

The majority of storm water from the proposed site improvements will be routed through the on-site storm storage area prior to leaving the site. The storage along with the SNOUT structure will act as a filter of post-construction storm water by allowing sediment, sand and grit to settle out prior to leaving the site. Some areas will sheet flow off site without entering the basin. However, these areas will be vegetated and consist of grassed and wooded areas. These areas will

C5: Maintenance Guidelines for Post-Construction Measures

All trash and debris shall be picked up and disposed of lawfully. Visual inspection of maintenance requirements. The SNOUT structure shall be inspected monthly for the first year to determine the rate of accumulation of sediment and floatable debris. After 12 months, the maintenance and inspection schedule can be adjusted based on the actual accumulation rates.

At the completion of construction and full site stabilization, Contractor shall vacuum out the SNOUT structure sump and remove all floatable debris to provide a clean structure at delivery to Owner.

**C6: Entity Responsible for Post-Construction Operation and Maintenance** 

All maintenance after construction completion shall be the responsibility of the site Owner. Contractor shall provide Owner with manufacturer's spec sheets and

Temporary Seeding Recommendations **Optimum Dates** Seed Species 1 Rate per Acre (lbs) | Planting Depth (in) Sept 15 - Oct 30 150 1 to 1.5 Wheat or Rye 100 March 1 - April 15 Spring Oats March 1 - May 1 Annual Ryegrass 0.2500 Aug 1 - Sept 1 40 German Millet 1 to 2 May 1 - June 1 Sudangrass 35 1 to 2 May 1 - July 30 Buckwheat 60 1 to 2 April 15 - June 1 300 Corn (broadcast) 1 to 2 May 11- Aug 10 Sorghum 35 1 to 2 May 1 - July 15

Temporary Dormant or Frost Seeding Recommendations Rate per Acre Seed Species Wheat or Rye Spring Oats Annual Ryegrass <sup>¹</sup>

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Perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than one year (see Permanent Seeding).

<sup>2</sup> Seeding done outside the optimum seeding dates increases the chances of seeding failure. Dates may be extended or shortened based on the location of the project site within the state.

Mulch alone is an acceptable temporary cover and may be used in lieu of temporary seeding, provided that

A high potential for fertilizer, seed and mulch to wash exists on steep banks, cuts and in channels and areas of concentrated flow.

Permanent Seeding Recommendations

Lawns and High-Maintenance Areas

Lawns and High-Iwaintenance Areas		
Seed Mixtures	Rate per Acre Pure Live Seed (lbs)	Optimum Soil pH
1. Bluegrass	140	5.5 to 7.0
Perennial ryegrass (turf type)	60 90	5.6 to 7.0
<ul><li>3. Tall fescue(turf type)<sup>2</sup></li><li>bluegrass</li></ul>	170 30	5.6 to 7.5
	ent Seeding Recomme and Areas of Concentr	
Seed Mixtures	Rate per Acre Pure Live Seed (lbs)	Optimum Soil pH
Perennial ryegrass     white clover	150 2	5.5 to 7.0
2. Kentucky bluegrass - smooth bromegrass - switchgrass - timothy - perennial ryegrass - white clover <sup>2</sup>	20 10 3 4 10 2	5.5 to 7.5
3. Tall fescue <sup>1</sup> - white clover <sup>2</sup>	150 2	5.5 to 7.5
4. Tall fescue <sup>2</sup> - perennial ryegrass  - Kentucky bluegrass	150 20 20	5.5 to 7.5

For best results: a) legume seed should be inoculated; b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded (see Dormant Seeding and Frost Seeding); and c) if legumes are fall-seeded, do so in early fall.

<sup>2</sup> Tall fescue provides little cover for, and may be toxic to some species of wildlife.

An oat or wheat companion or nurse crop may be used with any of the

above permanent seeding mixtures, at the following rates: (a) spring oats  $-\frac{1}{4}$  to  $\frac{3}{4}$  bushel per acre

(b) wheat - no more than  $\frac{1}{2}$  bushel per acre A high potential for fertilizer, seed and mulch to wash exists on steep banks, cuts and in channels and areas of concentrated flow.

	Permanent Dormant or Frost Seeding Recommendations Lawns and High-Maintenance Areas			Permanent Dormant or Frost Seeding Recommendations Channels and Areas of Concentrated Flow		
	Seed Mixtures	Rate per Acre Pure Live Seed	Optimum Soil pH	Seed Mixtures	Rate per Acre Pure Live Seed (lbs)	Optimum Soil pH
		(lbs)		1. Perennial	225	
	1. Bluegrass	210	5.5 to 7.0	ryegrass - white clover <sup>1</sup>	3	5.5 to 7.0
_	Perennial ryegrass (turf type)	90 135	5.6 to 7.0	Kentucky bluegrass     smooth	30 15	
	<ul> <li>3. Tall fescue(turf type)<sup>2</sup></li> <li>bluegrass</li> </ul>	250 45	5.6 to 7.5	bromegrass - switchgrass - timothy - perennial	5 6 15	5.5 to 7.5
•				ryegrass - white clover <sup>2</sup>	3	

See sheet C1.1 for Erosion Control Plan and C1.3 for Erosion Control Details.

3. Tall fescue <sup>1</sup>

- white clover

4. Tall fescue 2

perennial

Kentucky

oluegrass



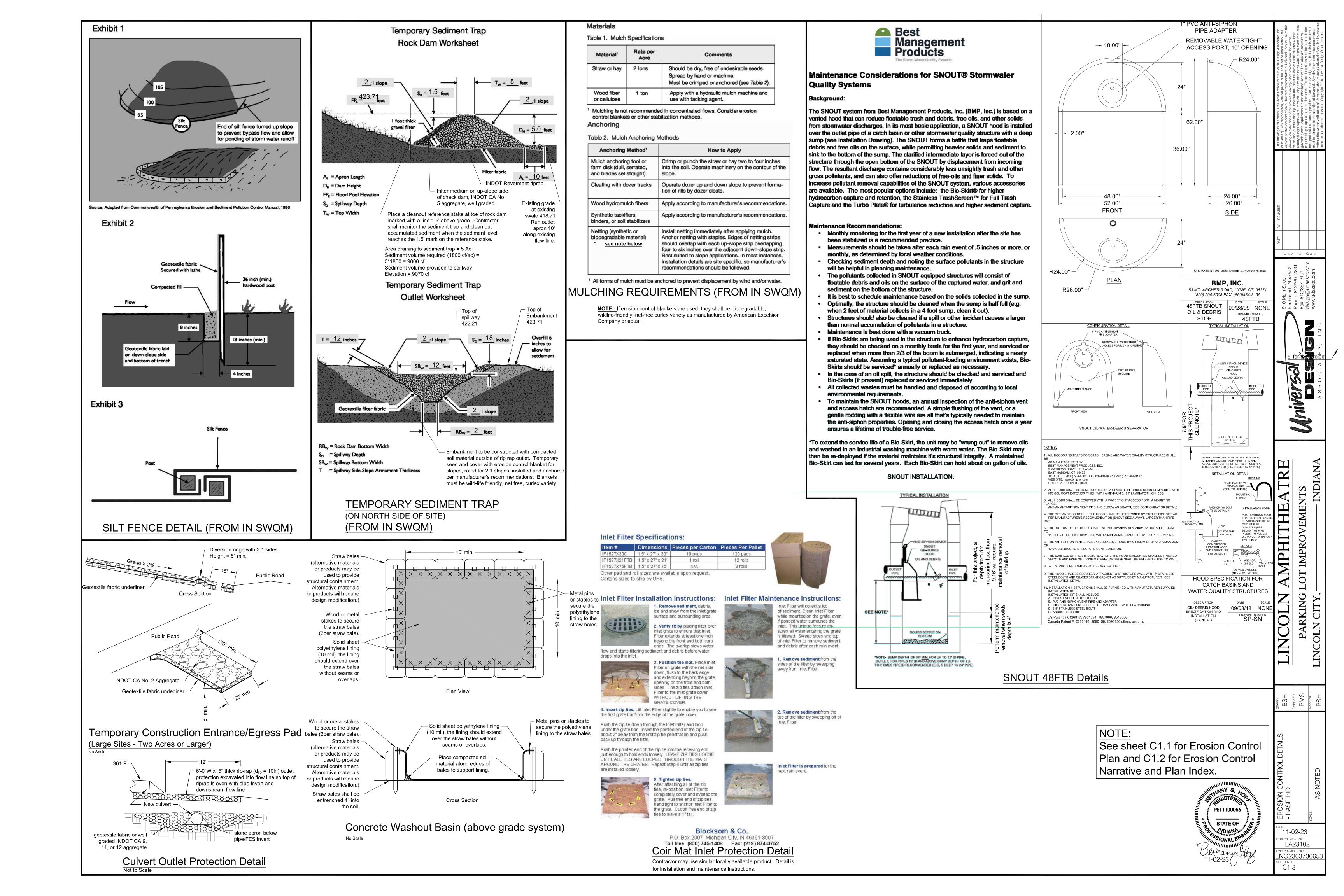
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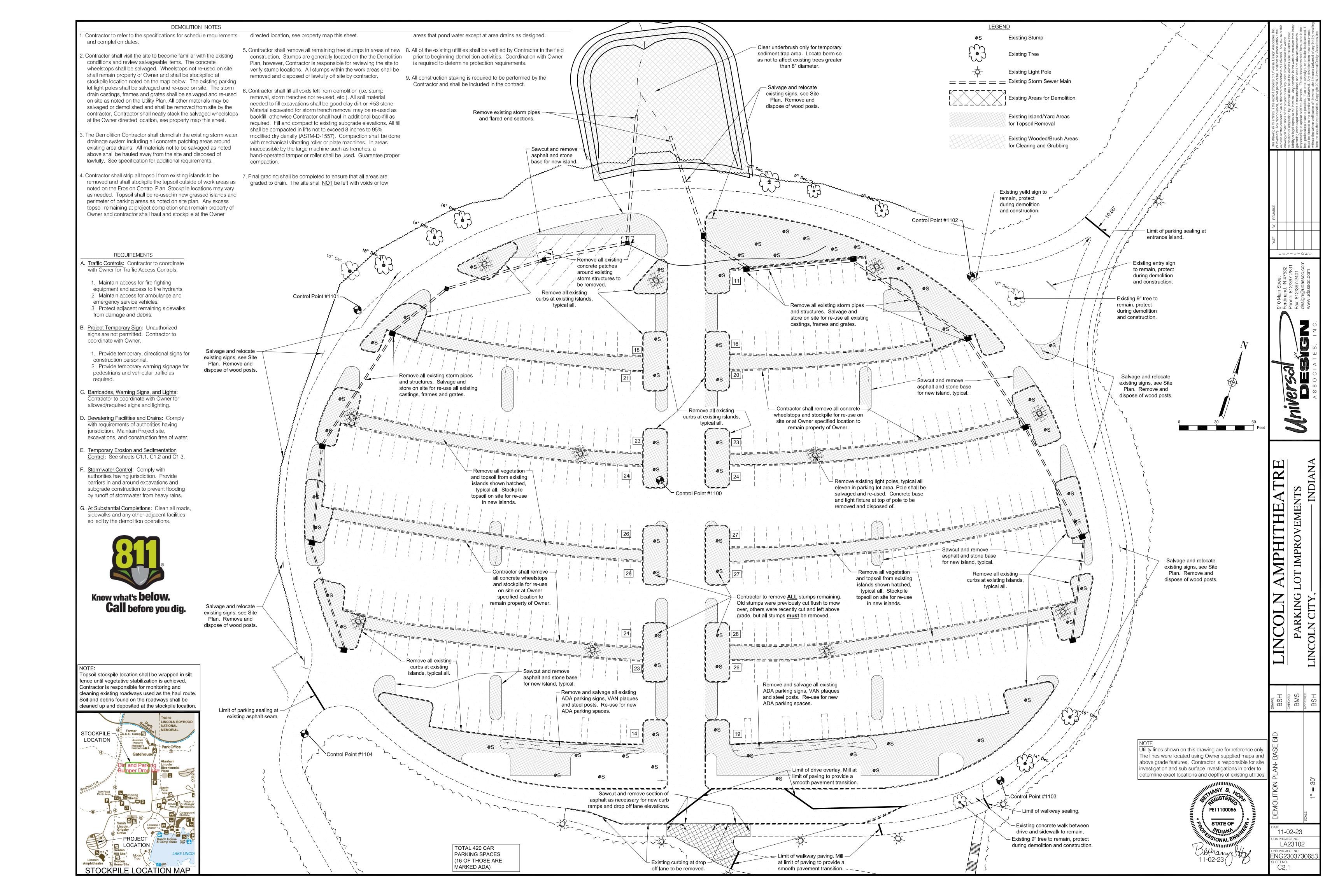
5.5 to 7.5

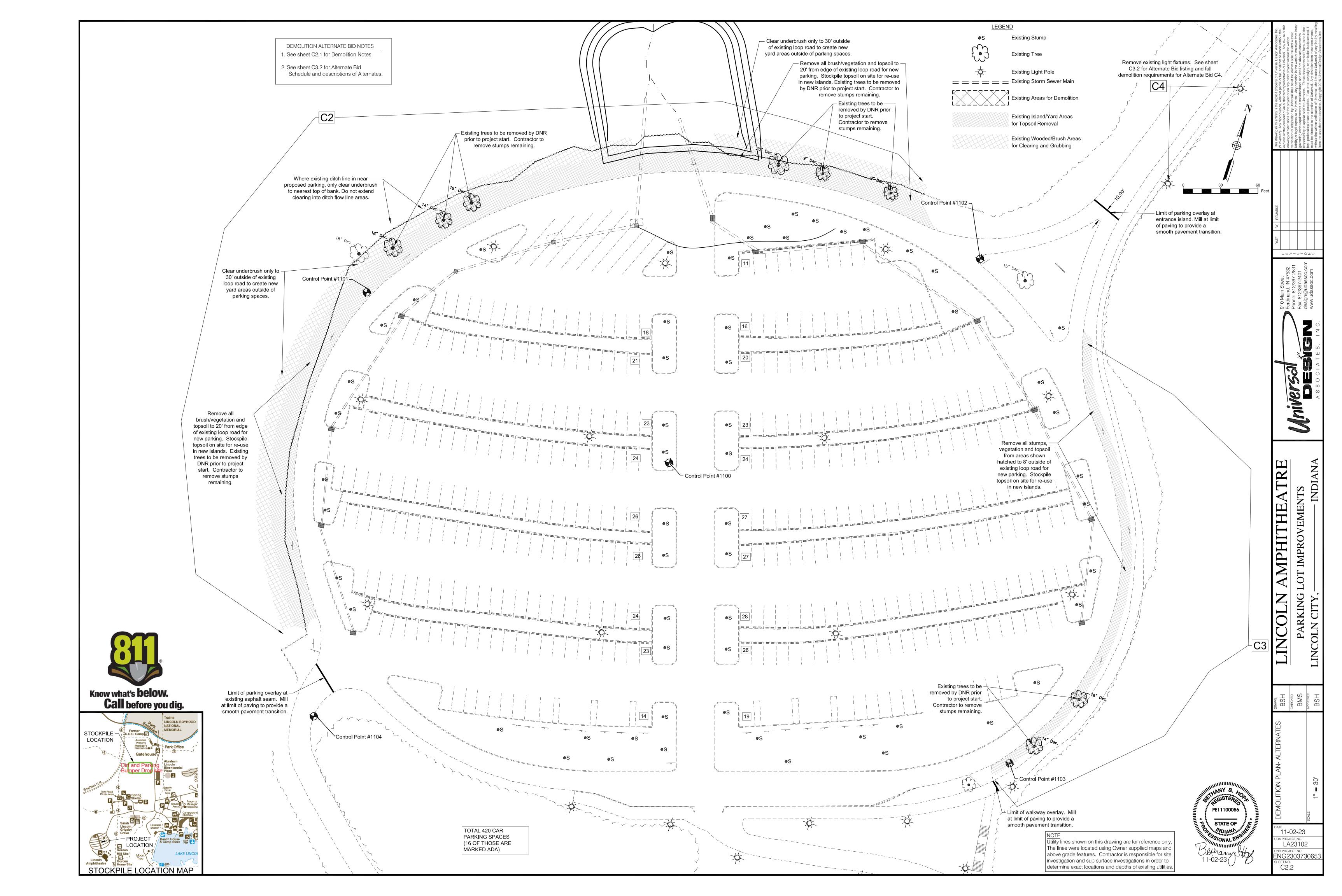
5.5 to 7.5

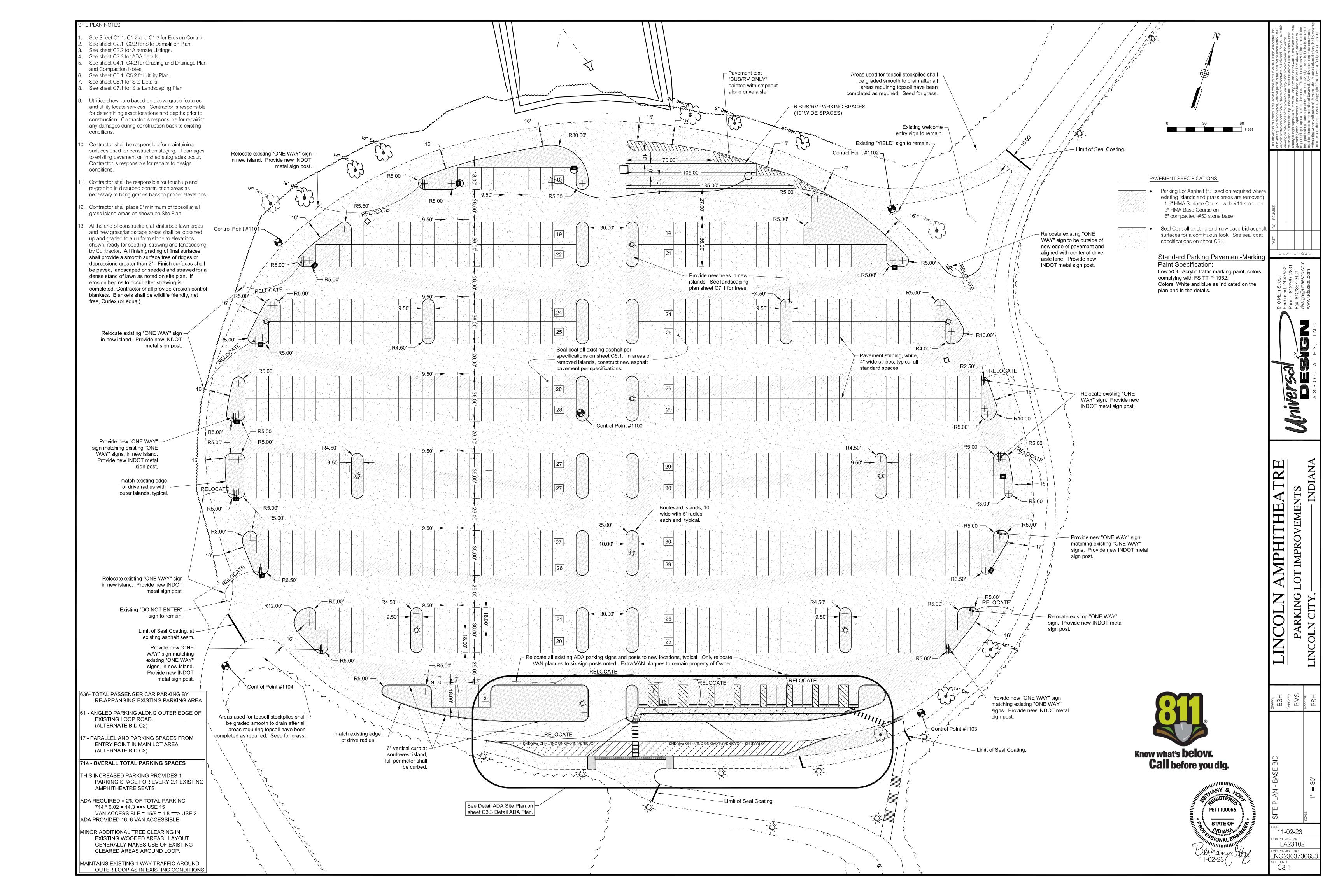
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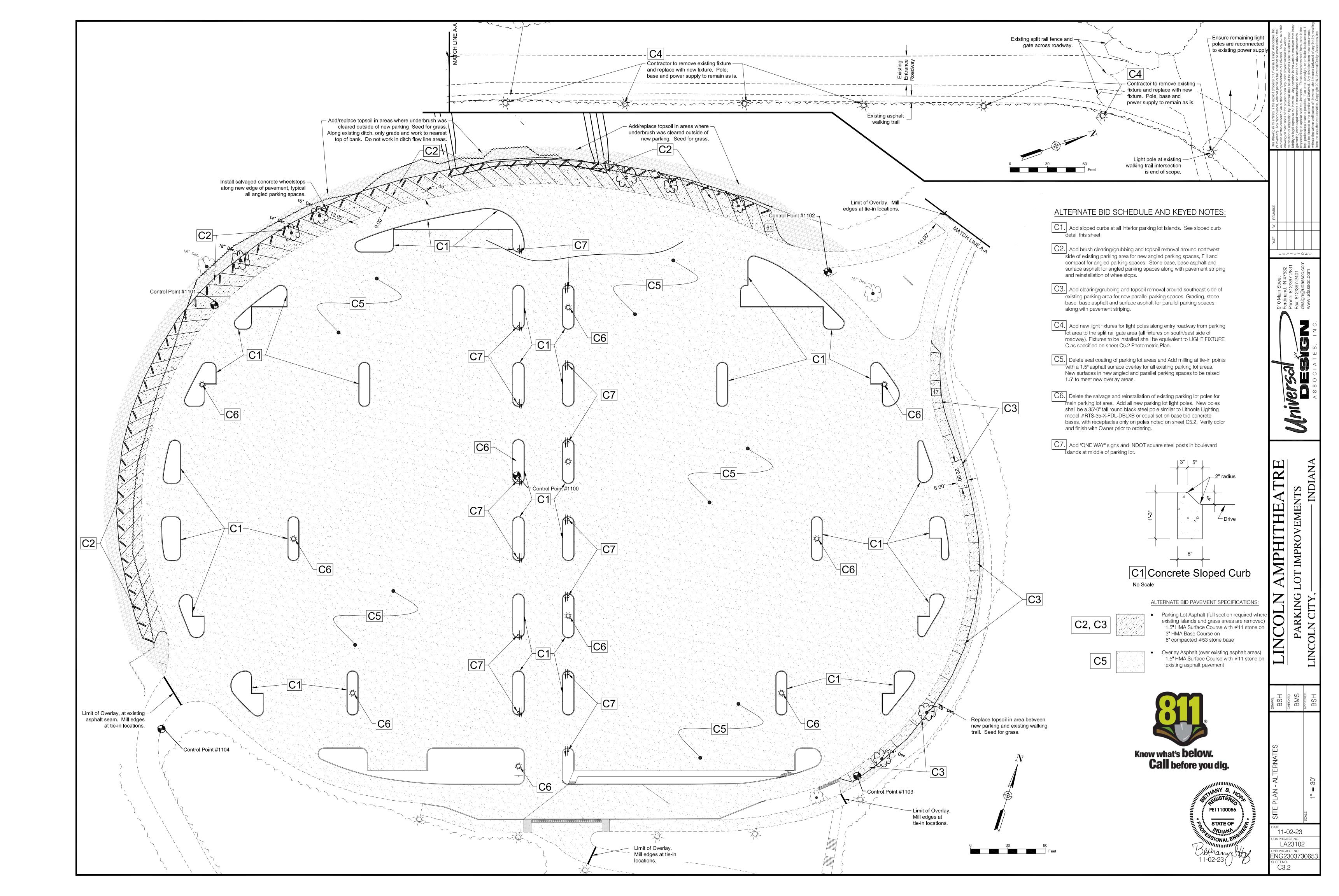
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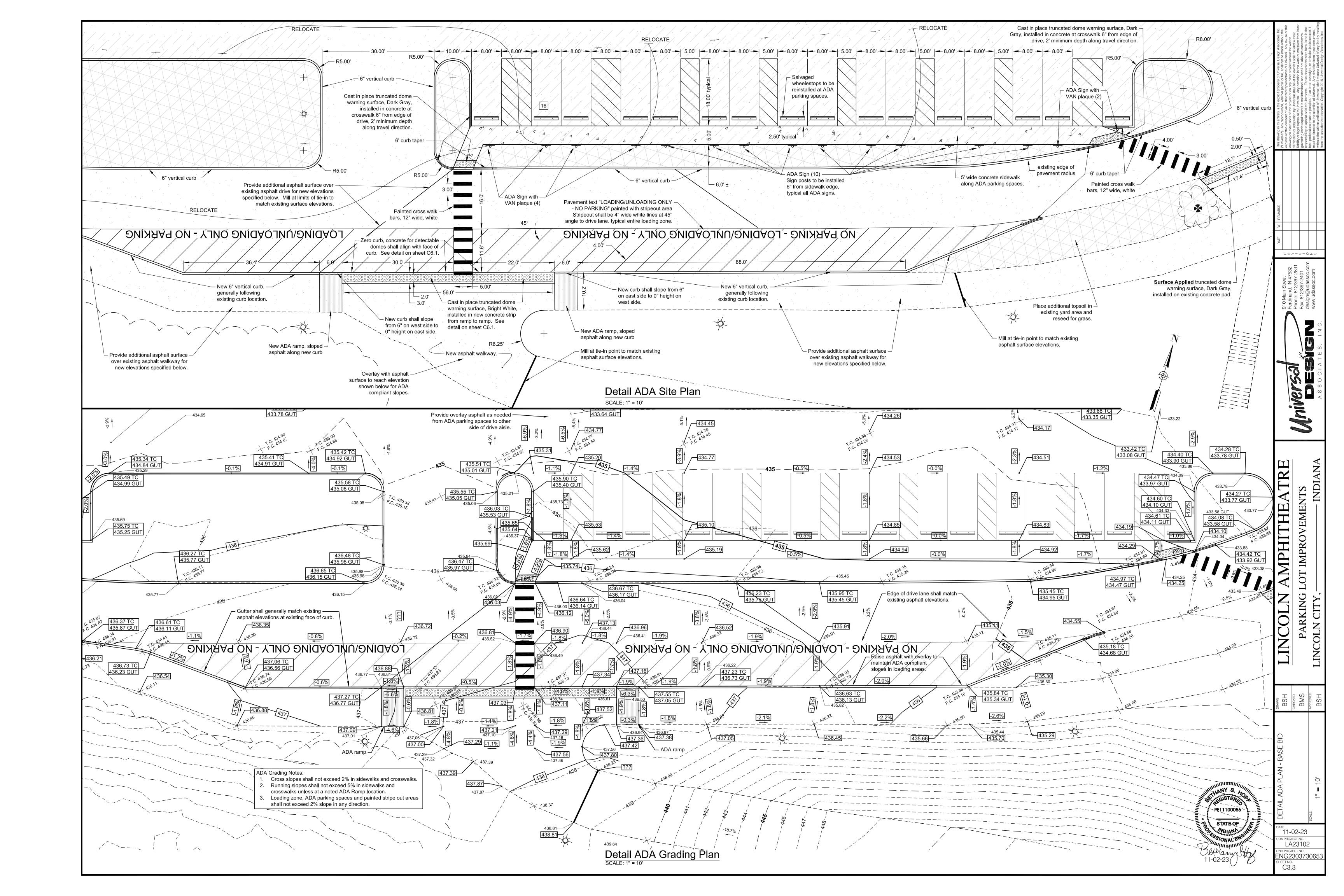


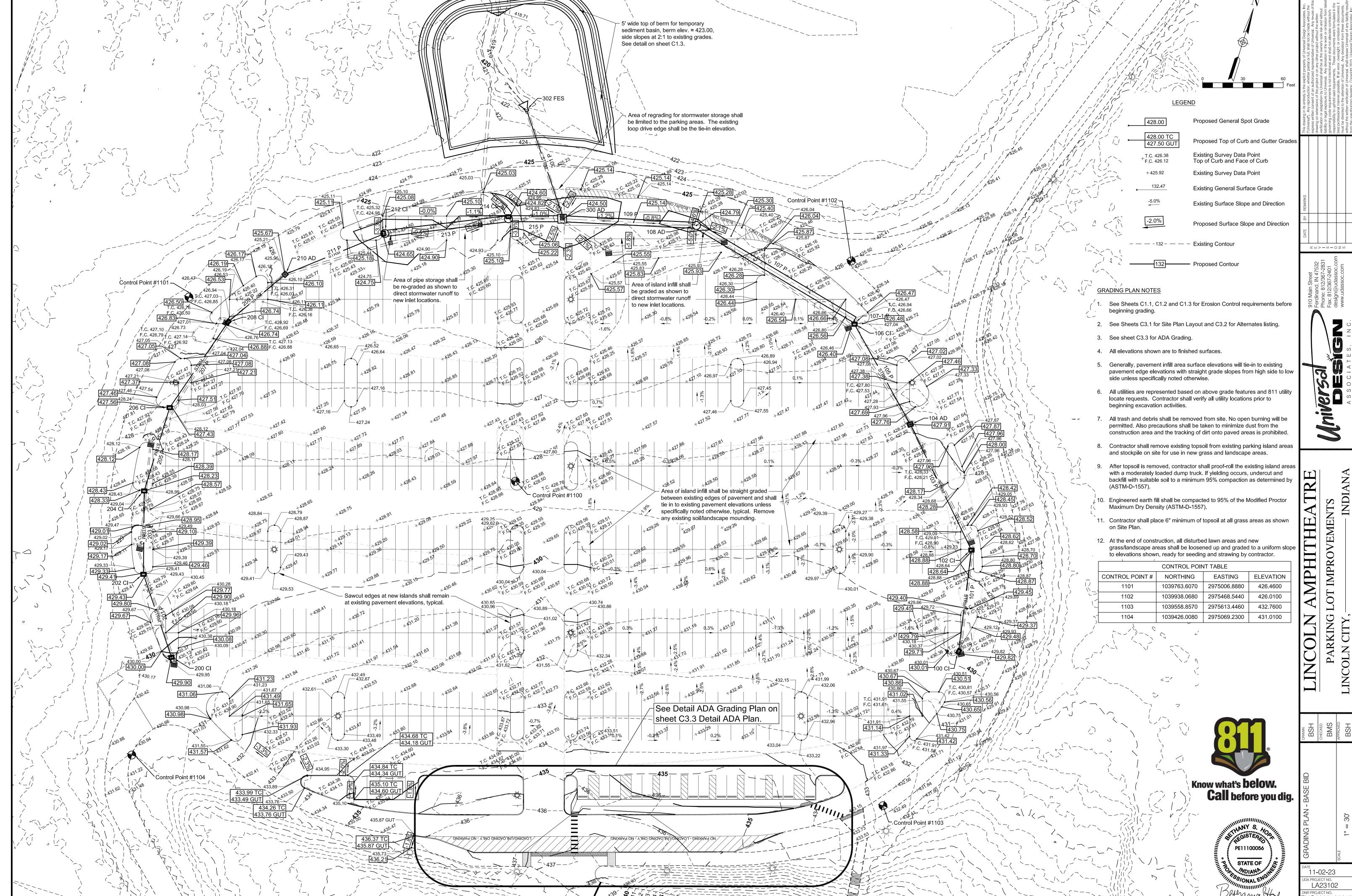






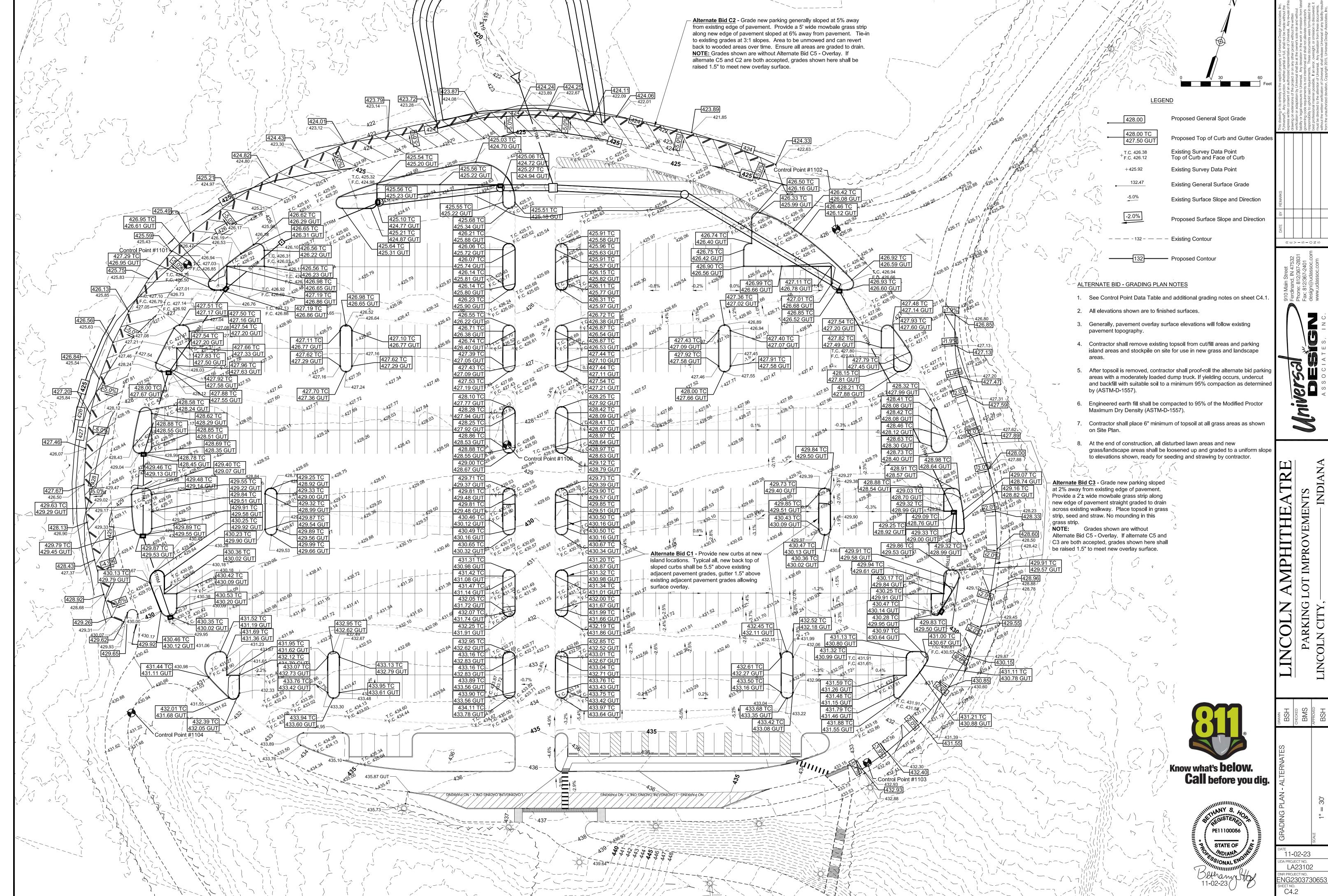








ENG230373065 C4.1



STORMWATER STORAGE DATA Q10

Q100 Pre-developed Total Runoff: 25.8 cfs 34.1 cfs 51.3 cfs Developed Runoff (undetained): 5.4 cfs 7.2 cfs 10.7 cfs Developed Runoff (basin outlet restricted): 20.1 cfs 26.6 cfs 40.3 cfs

Storage Volume Required: 3281 CF 4220 CF 4850 CF Storage Volume Provided in below grade oversized pipes: 4645 CF (48" pipes) 900 CF Storage Volume Provided at surface (max. depth 6") TOTAL storm storage volume: 5545 CF

The project is reducing from two existing 30" Ø outlet pipes to one single 30" Ø outlet pipe proposed, thereby reducing the total maximum possible discharge by half from existing conditions.

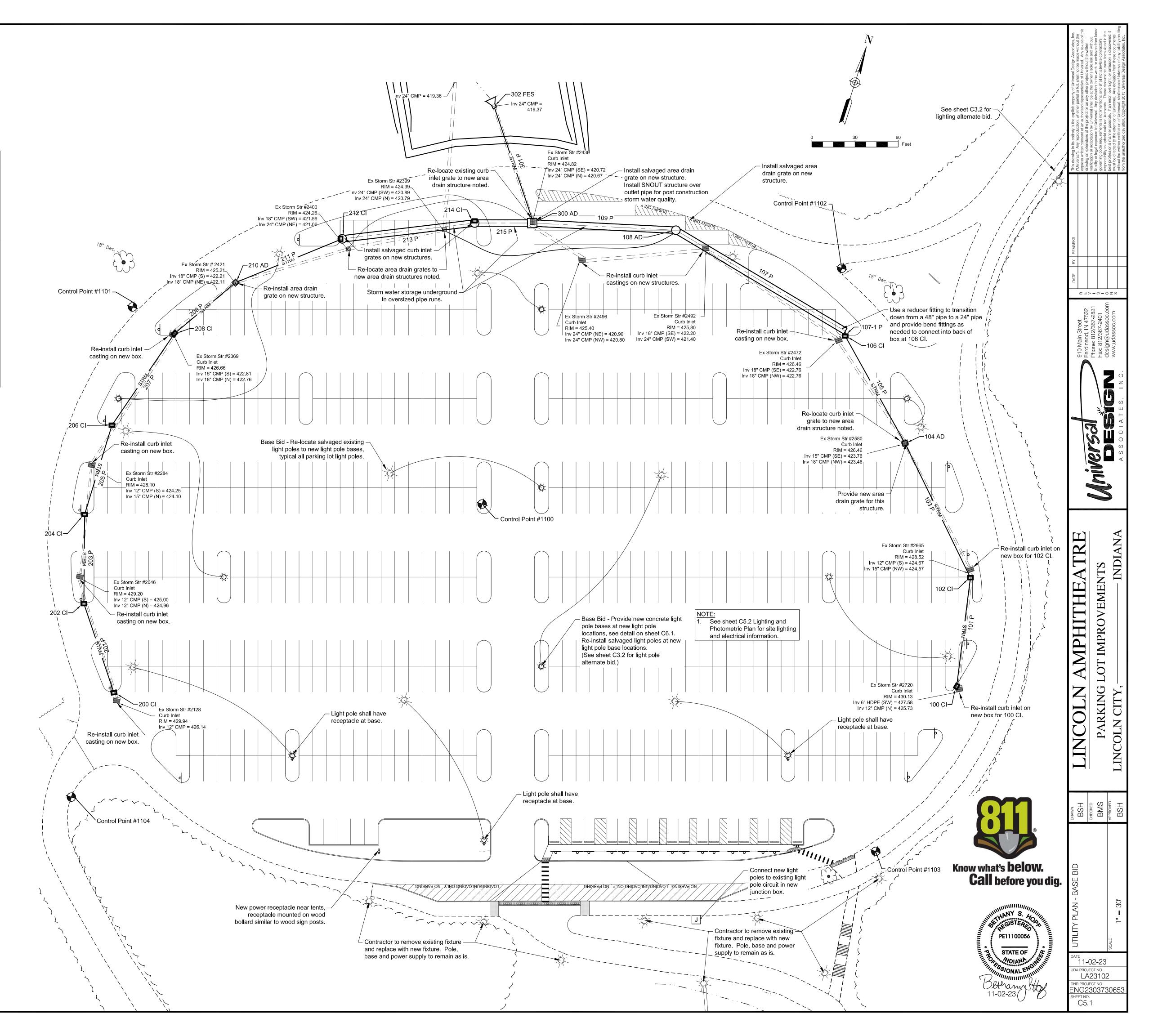
Storm Structure Data Table						
Name	Size	US IE	DS IE	SUMP IE	Rim	CASTING
100 CI	24"X36" CURB INLET BOX		427.26	427.26	429.92	EXIST. CI
102 CI	24"X36" CURB INLET BOX	426.12	426.11	426.11	428.81	EXIST. CI
104 AD	30"X30" AREA DRAIN BOX	424.55	424.55	424.55	428.04	EJ 5250
106 CI	24"X36" CURB INLET BOX	423.25	423.15	423.15	426.53	EXIST. CI
108 AD	60" Ø SLAB TOP AREA DRAIN	419.62	419.62	419.62	424.92	EX. LARGE AREA DRAIN GRATE
200 CI	24"X36" CURB INLET BOX		427.51	427.51	430.03	EXIST. CI
202 CI	24"X36" CURB INLET BOX	426.53	426.53	426.53	429.55	EXIST. CI
204 CI	24"X36" CURB INLET BOX	425.60	425.60	425.60	428.40	EXIST. CI
206 CI	24"X36" CURB INLET BOX	424.63	424.63	424.63	427.59	EXIST. CI
208 CI	24"X36" CURB INLET BOX	423.49	423.49	423.49	425.68	EXIST. CI
210 AD	30"X30" AREA DRAIN BOX	422.66	422.66	422.66	425.80	EX. AD GRATE
212 CI	60" Ø SLAB TOP CURB INLET	421.16	419.67	419.67	424.78	EXIST. CI
214 CI	60" Ø SLAB TOP CURB INLET	419.50	419.50	419.50	424.76	EXIST. CI
300 AD	62"x62" AREA DRAIN BOX	419.43 419.43	419.39	411.89	424.64	EX. LARGE AREA DRAIN GRATE
302 FES	30" Ø CMP FES	419.00		`	421.79	

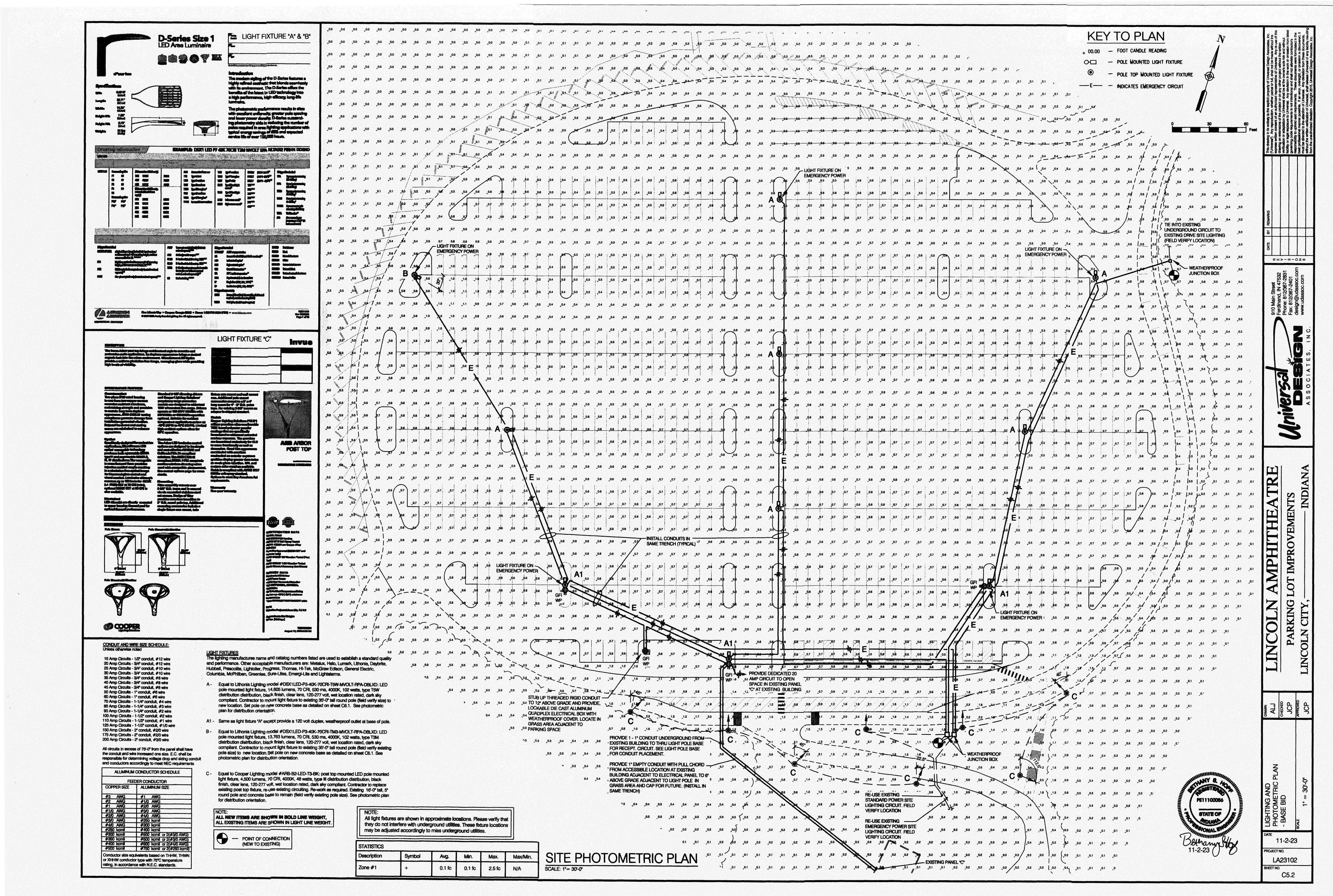
Storm Pipe Data Table					
Name	Size	Length	Slope	US IE	DS IE
101 P	12"	76.12'	1.50%	427.26	426.12
103 P	15"	103.91'	1.50%	426.11	424.55
105 P	18"	85.36'	1.52%	424.55	423.25
107-1 P	24"	3.36'	4.52%	423.15	423.00
107 P	48"	137.00'	1.01%	421.00	419.62
109 P	48"	100.00'	0.19%	419.62	419.43
201 P	12"	65.23'	1.50%	427.51	426.53
203 P	12"	62.00'	1.50%	426.53	425.60
205 P	15"	64.85'	1.50%	425.60	424.63
207 P	15"	77.00'	1.48%	424.63	423.49
209 P	18"	55.31'	1.50%	423.49	422.66
211 P	18"	80.17'	1.88%	422.66	421.16
213 P	48"	92.66'	0.18%	419.67	419.50
215 P	48"	40.00'	0.18%	419.50	419.43
301 P	30"	85.06'	0.46%	419.39	419.00

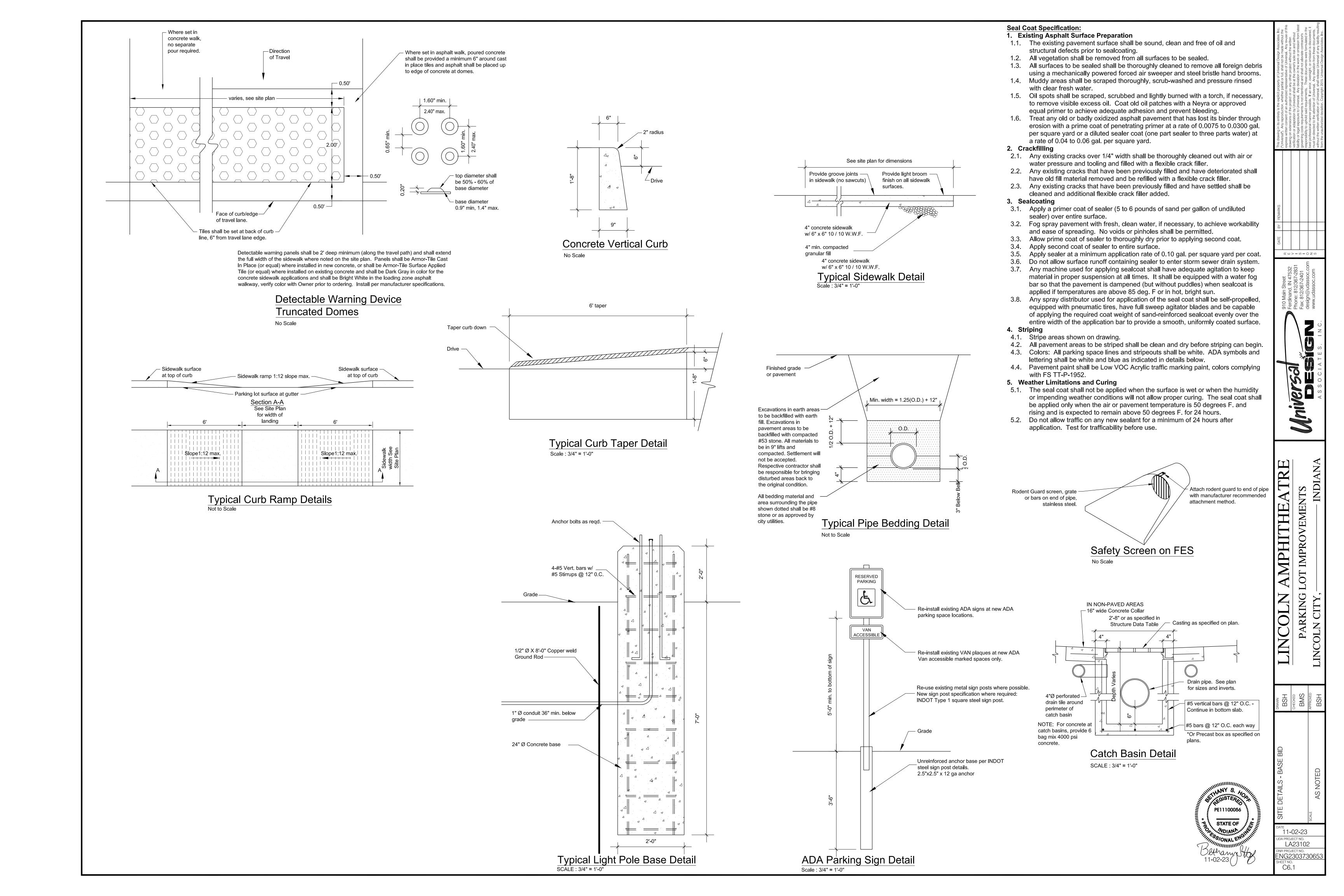
## STORM SYSTEM NOTES

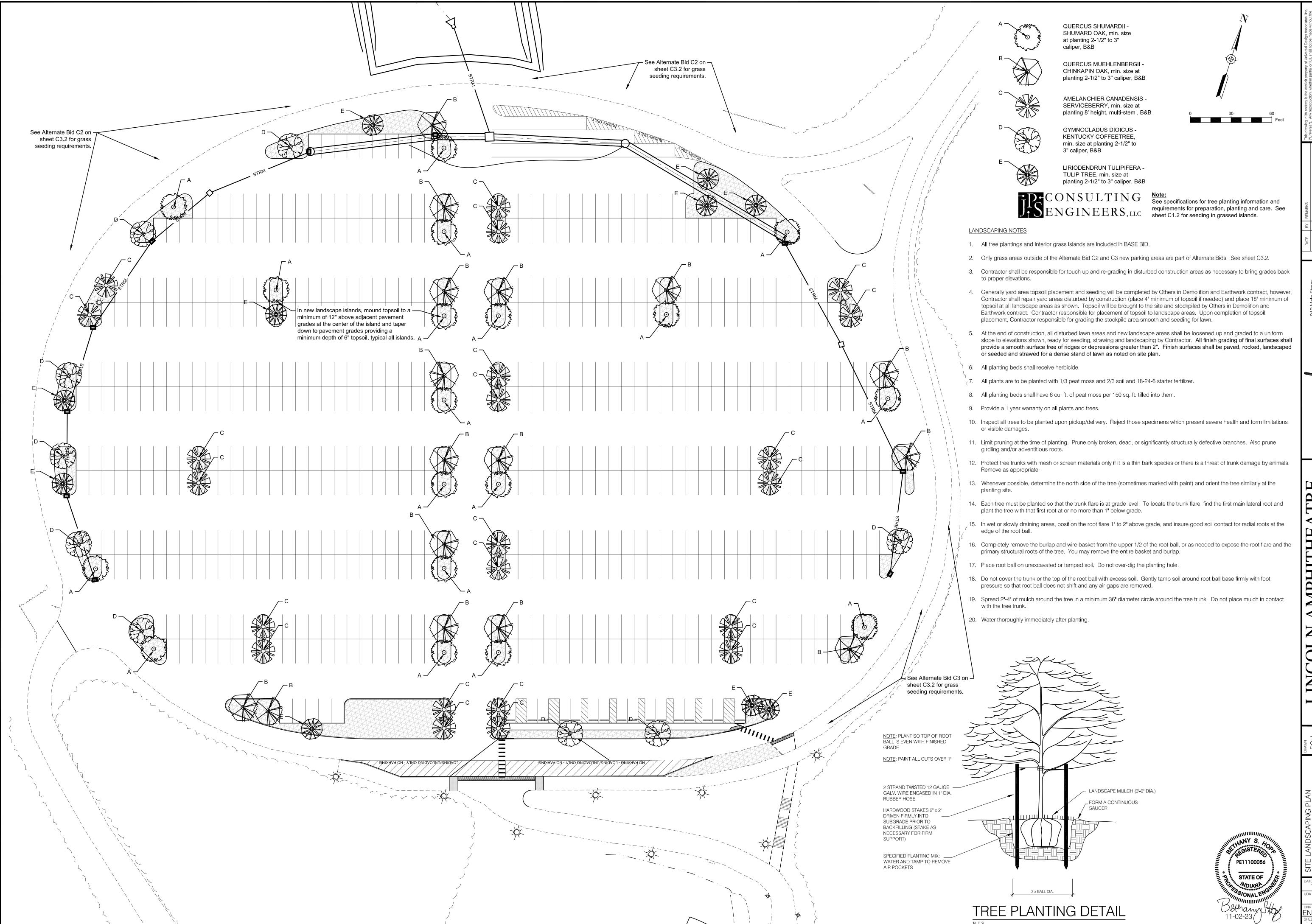
- 1. All pipe shall be N-12 HDPE pipe.
- All storm structures shall be precast concrete. All Flared End Sections shall be CMP, Aluminized Type 2.
- 4. Re-use existing frames, grates and castings where possible. All new castings, frames and grates where required shall be East Jordan Iron Works part specified in Structure Data Table or
- 5. SNOUT shall be installed in 300 AD over outlet pipe 301 P. See
- detail on sheet C1.3. 6. See Sheet C3.2 for Utility Alternates (light poles and entry road

ixtures).		
	<u>LEGE</u> 1	<u>ND</u>
	<b>*</b>	Proposed Light Pole
		Existing Light Pole
	— в — — -	<ul> <li>Existing Underground Electric Line</li> </ul>
	— Е ———	<ul> <li>Proposed Underground Electric Line</li> </ul>
	<del>IIIII</del>	Proposed Curb Inlet
	<b>◄</b>	Proposed Flared End Section
		Existing Curb Inlet
	— STRM —— — -	<ul> <li>Existing Storm Sewer Main</li> </ul>
	- STRM	<ul> <li>Proposed Storm Sewer Main</li> </ul>









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LOT IMPROVEMENT

LINCOLN PARKING I

11-02-23

LA23102 NG230373065 HEET NO. C7.1