

# Henry Vilas Zoo Arctic Animal Exhibit & Concessions

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WDM Architects P.A.  
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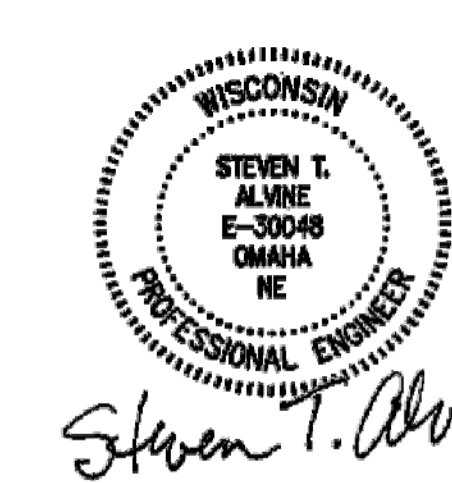
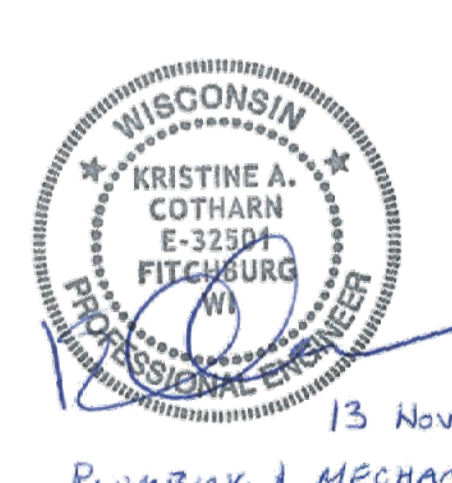
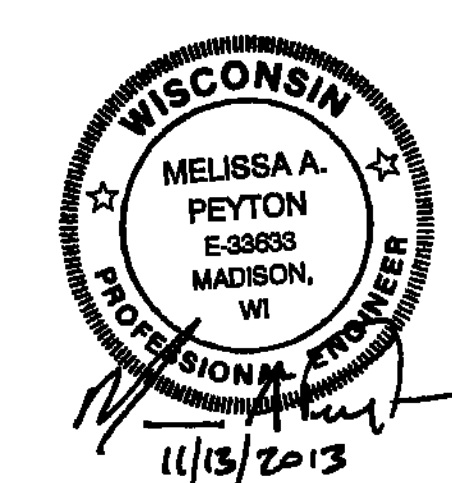


ARCTIC ANIMAL EXHIBIT AND CONCESSIONS  
RFB No. 313086  
Henry Vilas Zoo - County of Dane  
Department of Public Works  
Henry Vilas Zoo  
702 S Randall Ave  
Madison, Wisconsin  
1919 Alliant Energy Center Way  
Madison, Wisconsin

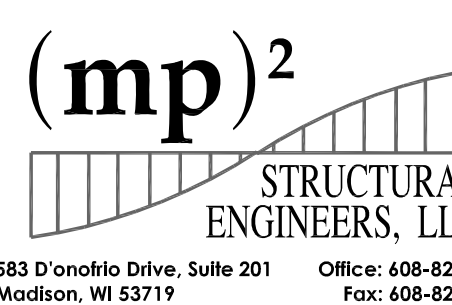
PRINTS ISSUED  
07.26.2013 - Schematic Design  
08.23.2013 - Design Development  
09.23.2013 - 65% CD's  
10.07.2013 - Pricing Set  
10.21.2013 - 95% CD's  
11.13.2013 - Bid Documents

WDM No. drawn: DS  
13046 checked: SR  
INDEX

CVR



WDM Architects P.A.  
105 North Washington  
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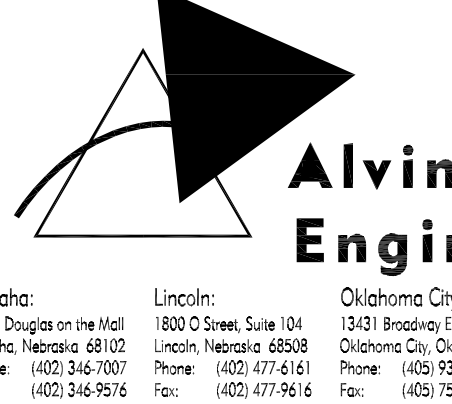
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LANDSCAPE ARCHITECT

STRUCTURAL ENGINEER

MECHANICAL, ELECTRICAL, TECHNOLOGY,  
FIRE PROTECTION

CIVIL ENGINEER

LIFE SUPPORT SYSTEMS

FOOD SERVICE DESIGNER



**PROJECT INFORMATION**

TYPE OF CONSTRUCTION:  
NEW CONSTRUCTION

FACILITY NAME:  
ARCTIC PASSAGE EXHIBIT & TUNDRA GRILL

FACILITY ADDRESS:  
702 S RANDALL AVE.  
MADISON, WISCONSIN

COUNTY: DANE COUNTY CITY: MADISON

LOCAL FIRE DEPARTMENT: MADISON

WATER SUPPLY: MADISON

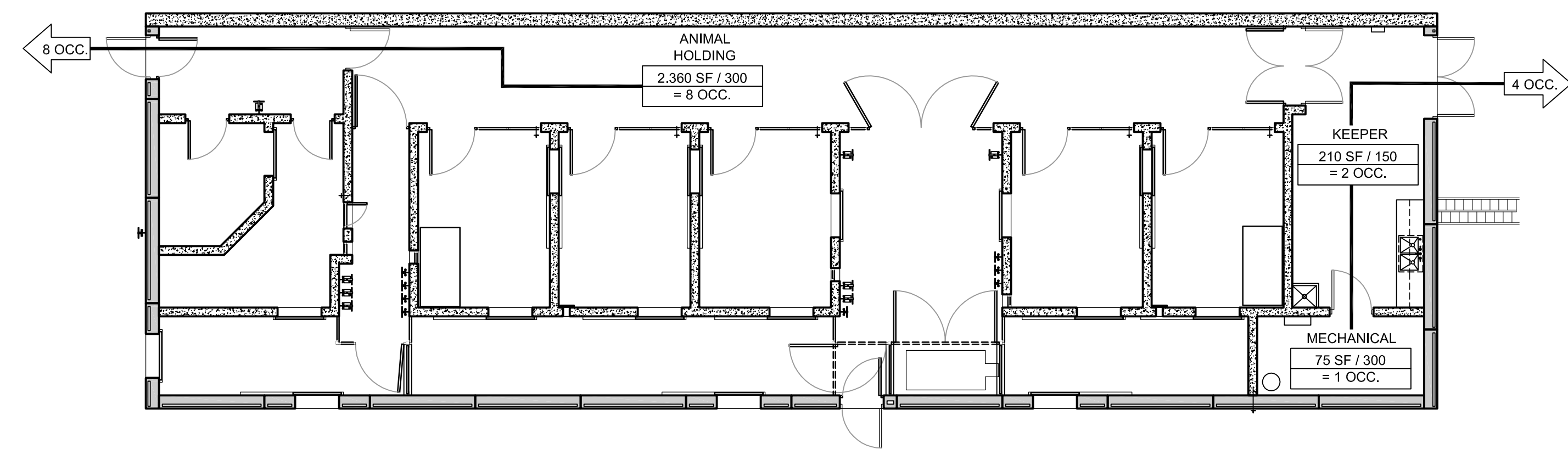
LOCAL BLDG. INSPECTION DEPT: MADISON

ARCHITECT:  
WDM ARCHITECTS P.A.  
105 N. WASHINGTON  
WICHITA, KS 67202  
P: 316-262-4700  
CONTACT: MATT SCHINDLER, AIA

STRUCTURAL ENGINEER:  
MP SQUARED STRUCTURAL ENGINEERS LLC  
583 DONOFRIO DRIVE, SUITE 201  
MADISON, WI 53719  
P: 608-821-4770  
CONTACT: MARK PUCCIO / MELISSA PEYTON

MECHANICAL / PLUMBING / ELECTRICAL ENGINEERS:  
KJWV ENGINEERING CONSULTANTS  
802 WEST BROADWAY, SUITE 312  
MADISON, WI 53713  
P: 608-223-8500  
CONTACT: KRIS COTHARN

CODE REGULATIONS USED:  
2006 INTERNATIONAL BUILDING CODE  
1999 NATIONAL ELECTRICAL CODE  
2006 INTERNATIONAL FIRE CODE  
2006 INTERNATIONAL MECHANICAL CODE  
2000 UNIFORM PLUMBING CODE  
AMERICANS WITH DISABILITIES ACT ACCESSIBILITY  
GUIDELINES FOR BUILDINGS AND FACILITIES  
(ADAAG)



**BEAR HOLDING BLDG.**

OCCUPANCY TYPE:  
U - 2,940 SF

CONSTRUCTION TYPE:  
V-B

ALLOWABLE AREA:  
5,500 SF

**BEAR HOLDING - FIRST FLOOR LEVEL**



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105 North Washington  
Wichita, KS 67202-2815  
T 316-262-4700  
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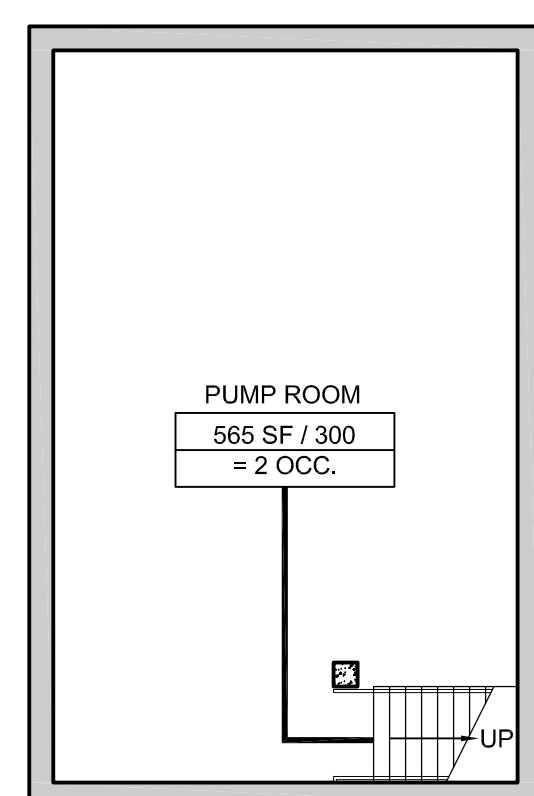
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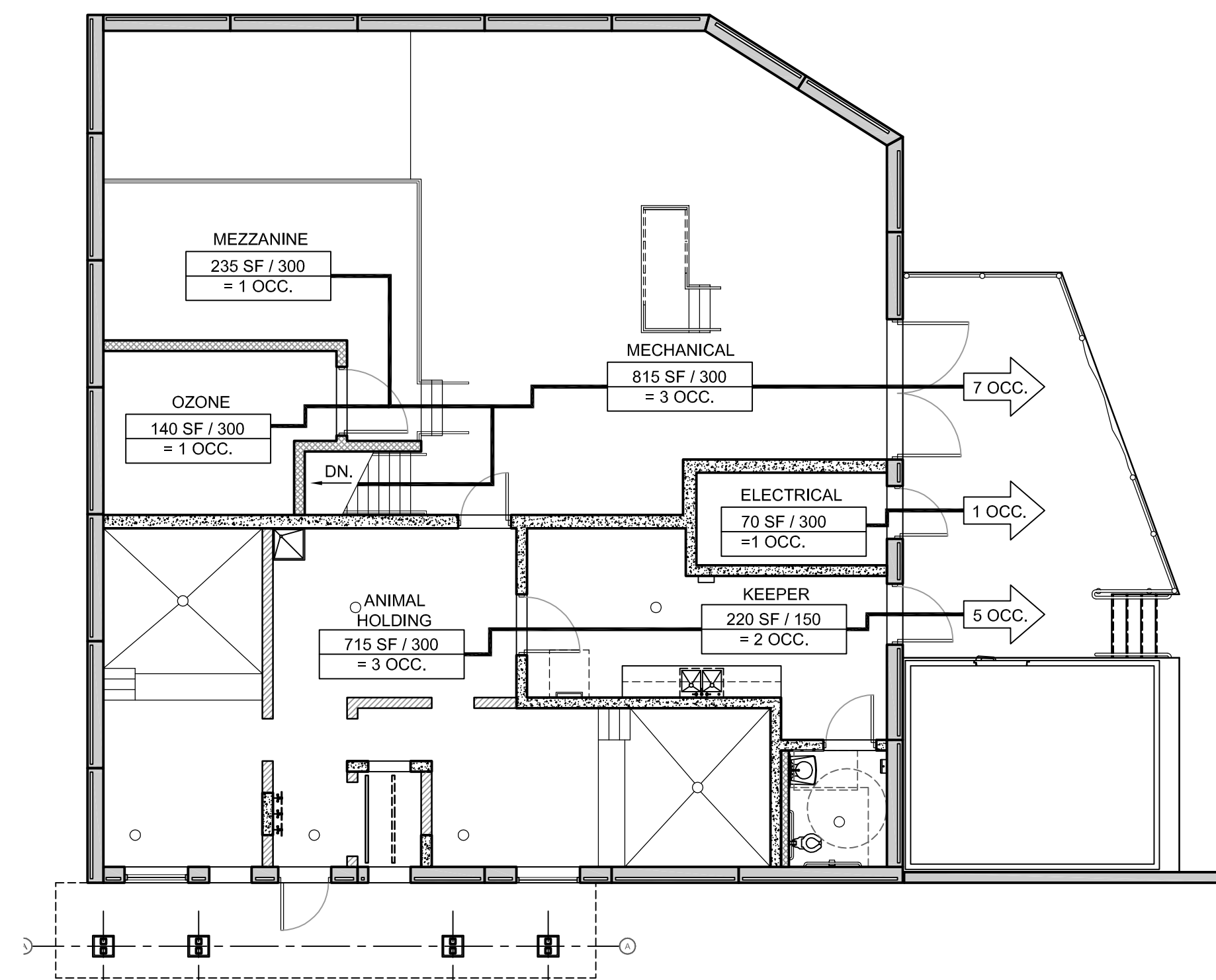
WDM No. drawn: DS  
**13046** checked: SR

RESTAURANT CODE PLAN  
BEAR HOLDING CODE PLAN  
SEAL / LIFE SUPPORT CODE PLAN

**CODE.1**



**SEAL HOLDING / LIFE SUPPORT - LOWER LEVEL**



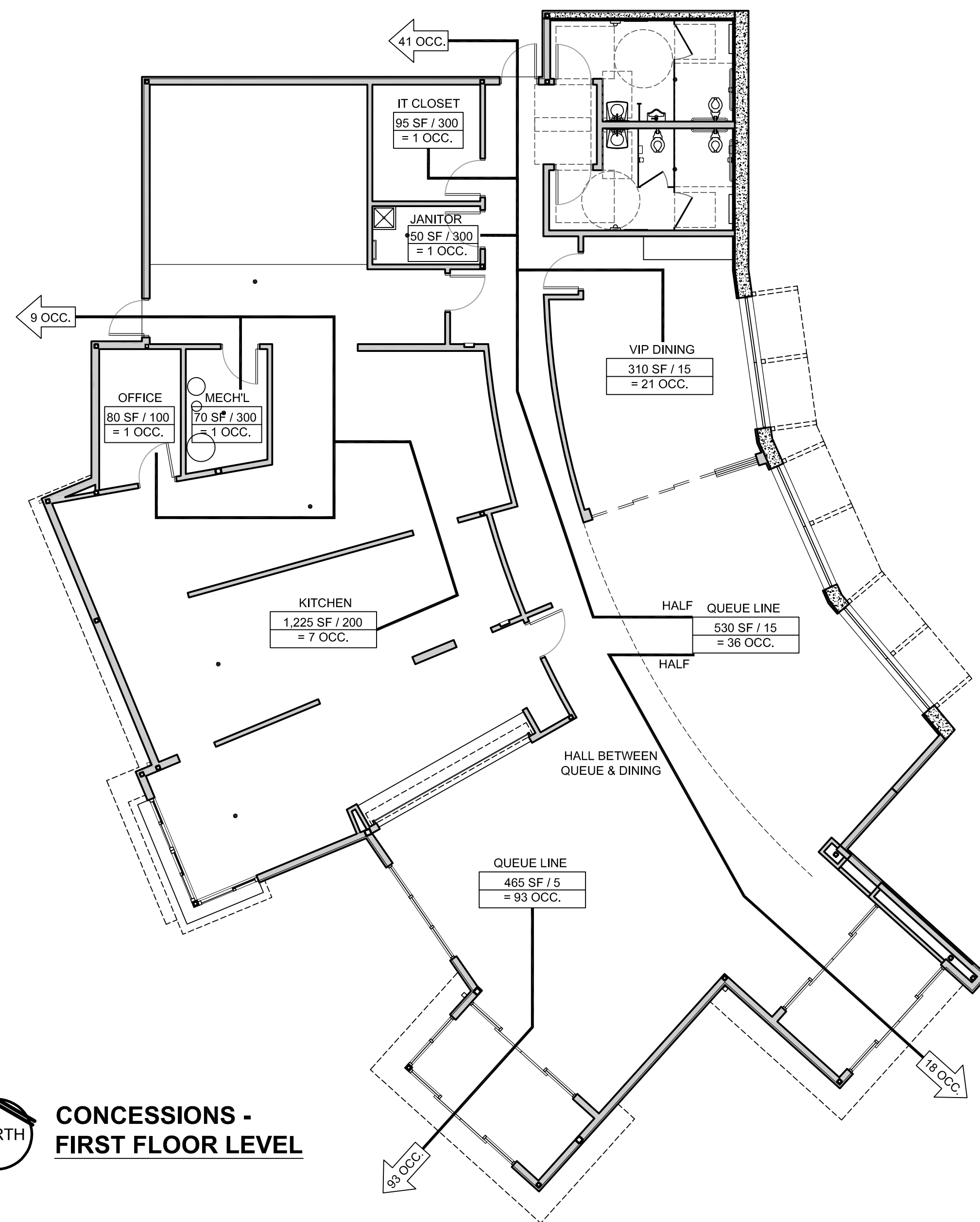
**SEAL / LIFE SUPPORT BLDG.**

OCCUPANCY TYPE:  
U - 3,530 SF

CONSTRUCTION TYPE:  
V-B

ALLOWABLE AREA:  
5,500 SF

**SEAL HOLDING / LIFE SUPPORT - FIRST FLOOR LEVEL**



**CONCESSIONS - FIRST FLOOR LEVEL**

**CONCESSIONS BLDG.**

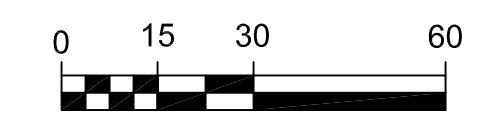
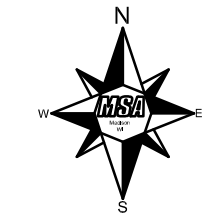
OCCUPANCY TYPE:  
A2 - 4,816 SF

CONSTRUCTION TYPE:  
V-B

ALLOWABLE AREA:  
6,000 SF

FIRE PROTECTION:  
FULLY SPRINKLED

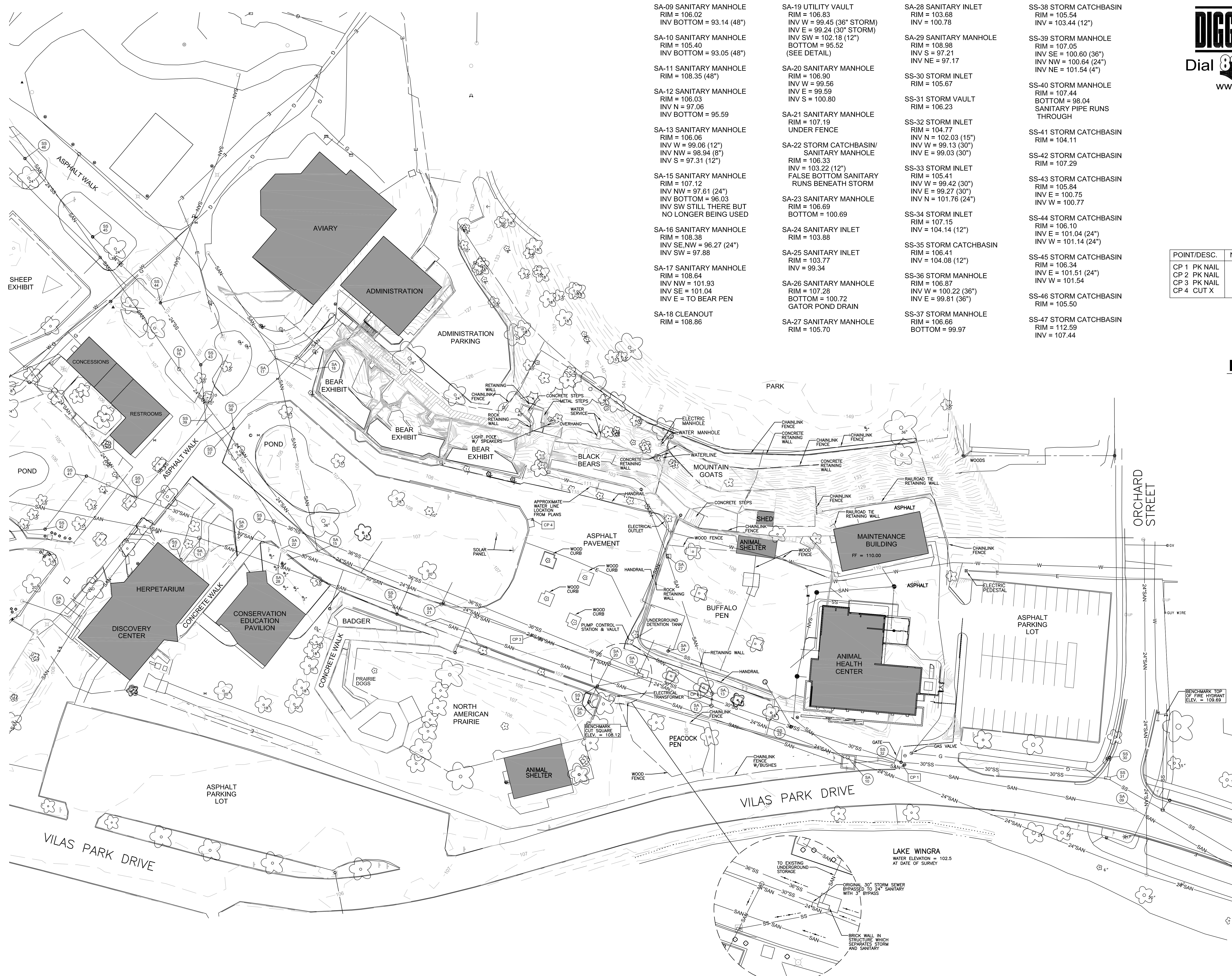




POINT/DESC.	NORTHING	EASTING	ELEVATION
CP 1 PK NAIL	476892.81	814889.34	105.06
CP 2 PK NAIL	476949.14	814728.51	106.02
CP 3 PK NAIL	477003.12	814576.45	107.14
CP 4 CUT X	477100.83	814576.78	108.32

## LEGEND

— W	EXISTING WATER MAIN
— SW	EXISTING SANITARY SEWER
— SS	EXISTING STORM SEWER
— B	BURIED ELECTRIC
— BV	BURIED GAS & VALVE
— FO	BURIED FIBER OPTICS
— FL	FENCE LINE
— TL	TREE LINE
— UPG	UTILITY POLE & GUY
— LP	LIGHT POLE
— PD	PEDESTAL
— S	SIGN
— TD	TREE - DECIDUOUS



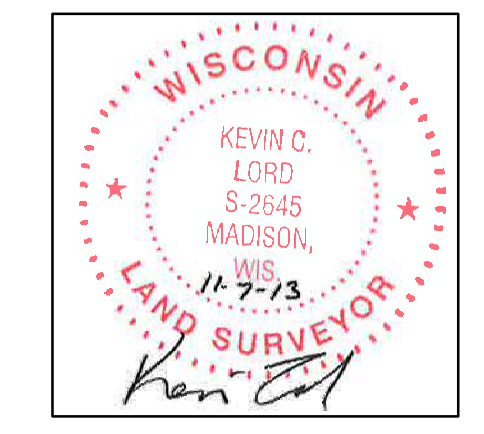
- SA-09 SANITARY MANHOLE  
RIM = 106.02  
INV BOTTOM = 93.14 (48")
- SA-10 SANITARY MANHOLE  
RIM = 105.40  
INV BOTTOM = 93.05 (48")
- SA-11 SANITARY MANHOLE  
RIM = 108.35 (48")
- SA-12 SANITARY MANHOLE  
RIM = 106.03  
INV N = 97.06  
INV BOTTOM = 95.59
- SA-13 SANITARY MANHOLE  
RIM = 106.06  
INV W = 99.06 (12")  
INV NW = 98.94 (8")  
INV S = 97.31 (12")
- SA-15 SANITARY MANHOLE  
RIM = 107.12  
INV NW = 97.61 (24")  
INV BOTTOM = 96.03  
INV SW STILL THERE BUT  
NO LONGER BEING USED
- SA-16 SANITARY MANHOLE  
RIM = 108.38  
INV SE, NW = 96.27 (24")  
INV SW = 97.88
- SA-17 SANITARY MANHOLE  
RIM = 108.64  
INV NW = 101.93  
INV SE = 101.04  
INV E = TO BEAR PEN
- SA-18 CLEANOUT  
RIM = 108.86
- SA-19 UTILITY VAULT  
RIM = 106.83  
INV W = 99.45 (36" STORM)  
INV E = 99.24 (30" STORM)  
INV SW = 102.18 (12")  
BOTTOM = 95.52  
(SEE DETAIL)
- SA-20 SANITARY MANHOLE  
RIM = 106.90  
INV W = 99.56  
INV E = 99.59  
INV S = 100.80
- SA-21 SANITARY MANHOLE  
RIM = 107.19  
UNDER FENCE
- SA-22 STORM CATCHBASIN/  
SANITARY MANHOLE  
RIM = 106.33  
INV BOTTOM SANITARY  
RUNS BENEATH STORM
- SA-23 SANITARY MANHOLE  
RIM = 106.69  
BOTTOM = 100.69
- SA-24 SANITARY INLET  
RIM = 103.88
- SA-25 SANITARY INLET  
RIM = 103.77  
INV = 99.34
- SA-26 SANITARY MANHOLE  
RIM = 107.28  
BOTTOM = 100.72  
GATOR POND DRAIN
- SA-27 SANITARY MANHOLE  
RIM = 105.70
- SA-28 SANITARY INLET  
RIM = 103.68  
INV = 100.78
- SA-29 SANITARY MANHOLE  
RIM = 108.98  
INV S = 97.21  
INV NE = 97.17
- SS-30 STORM INLET  
RIM = 105.67
- SS-31 STORM VAULT  
RIM = 106.23
- SS-32 STORM INLET  
RIM = 104.77  
INV N = 102.03 (15")  
INV W = 99.13 (30")  
INV E = 99.03 (30")
- SS-33 STORM INLET  
RIM = 105.41  
INV W = 99.42 (30")  
INV E = 99.27 (30")  
INV N = 101.76 (24")
- SS-34 STORM INLET  
RIM = 107.15  
INV = 104.14 (12")
- SS-35 STORM CATCHBASIN  
RIM = 106.41  
INV = 104.08 (12")
- SS-36 STORM MANHOLE  
RIM = 106.87  
INV W = 100.22 (36")  
INV E = 99.81 (36")
- SS-37 STORM MANHOLE  
RIM = 106.66  
BOTTOM = 99.97
- SS-38 STORM CATCHBASIN  
RIM = 105.54  
INV = 103.44 (12")
- SS-39 STORM MANHOLE  
RIM = 107.05  
INV SE = 100.60 (36")  
INV NW = 100.64 (24")  
INV NE = 101.54 (4")
- SS-40 STORM MANHOLE  
RIM = 107.44  
BOTTOM = 98.04  
SANITARY PIPE RUNS  
THROUGH
- SS-41 STORM CATCHBASIN  
RIM = 104.11
- SS-42 STORM CATCHBASIN  
RIM = 107.29
- SS-43 STORM CATCHBASIN  
RIM = 105.84  
INV E = 100.75  
INV W = 100.77
- SS-44 STORM CATCHBASIN  
RIM = 106.10  
INV E = 101.04 (24")  
INV W = 101.14 (24")
- SS-45 STORM CATCHBASIN  
RIM = 106.34  
INV E = 101.51 (24")  
INV W = 101.54
- SS-46 STORM CATCHBASIN  
RIM = 105.50
- SS-47 STORM CATCHBASIN  
RIM = 112.59  
INV = 107.44

PROJECT NO.	SCALE	NO.	DATE	REVISION	BY
06441000	AS SHOWN				
110713					

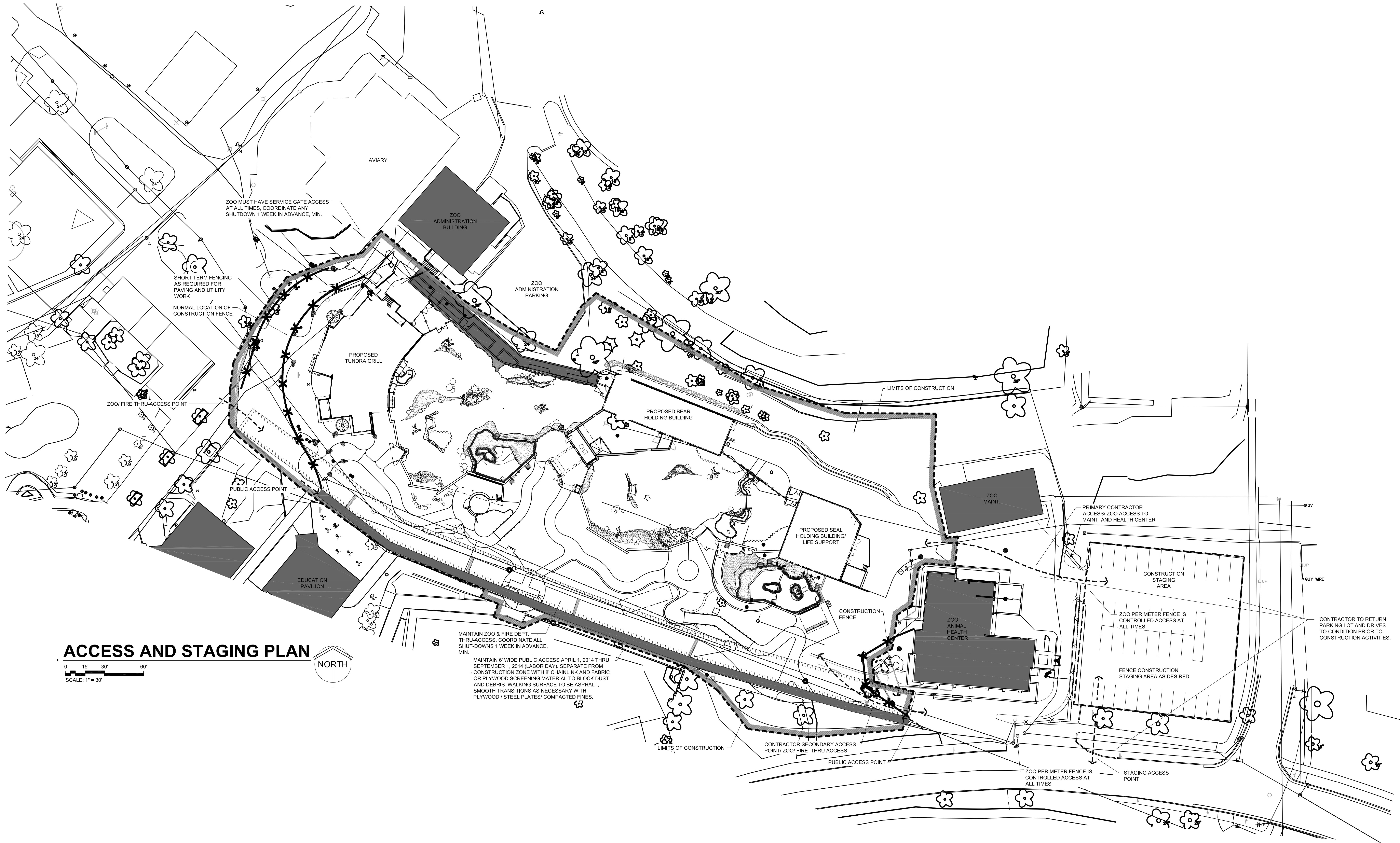
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EXISTING TOPOGRAPHY

Arctic Passage  
Dane County  
Henry Vilas Zoo







**ACCESS AND STAGING PLAN**

SCALE: 1" = 30'



MAINTAIN ZOO & FIRE DEPT. THRU-ACCESS. COORDINATE ALL SHUT-DOWNS 1 WEEK IN ADVANCE. MIN.

MAINTAIN 6' WIDE PUBLIC ACCESS APRIL 1, 2014 THRU SEPTEMBER 1, 2014 (LABOR DAY). SEPARATE FROM CONSTRUCTION ZONE WITH 8' CHAINLINK AND FABRIC OR PLYWOOD SCREENING MATERIAL TO BLOCK DUST AND DEBRIS. WALKING SURFACE TO BE ASPHALT. SMOOTH TRANSITIONS AS NECESSARY WITH PLYWOOD / STEEL PLATES/ COMPACTED FINES.

**wdm**  
ARCHITECTS

WDM Architects P.A.  
105 North Washington  
Wichita, KS 67202-2815  
T 316.262.4700  
F 316.262.0002  
wdmarchitects.com

we do more  
**henry vilas**  
**700**

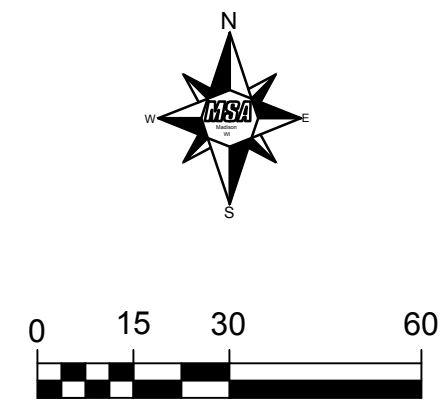
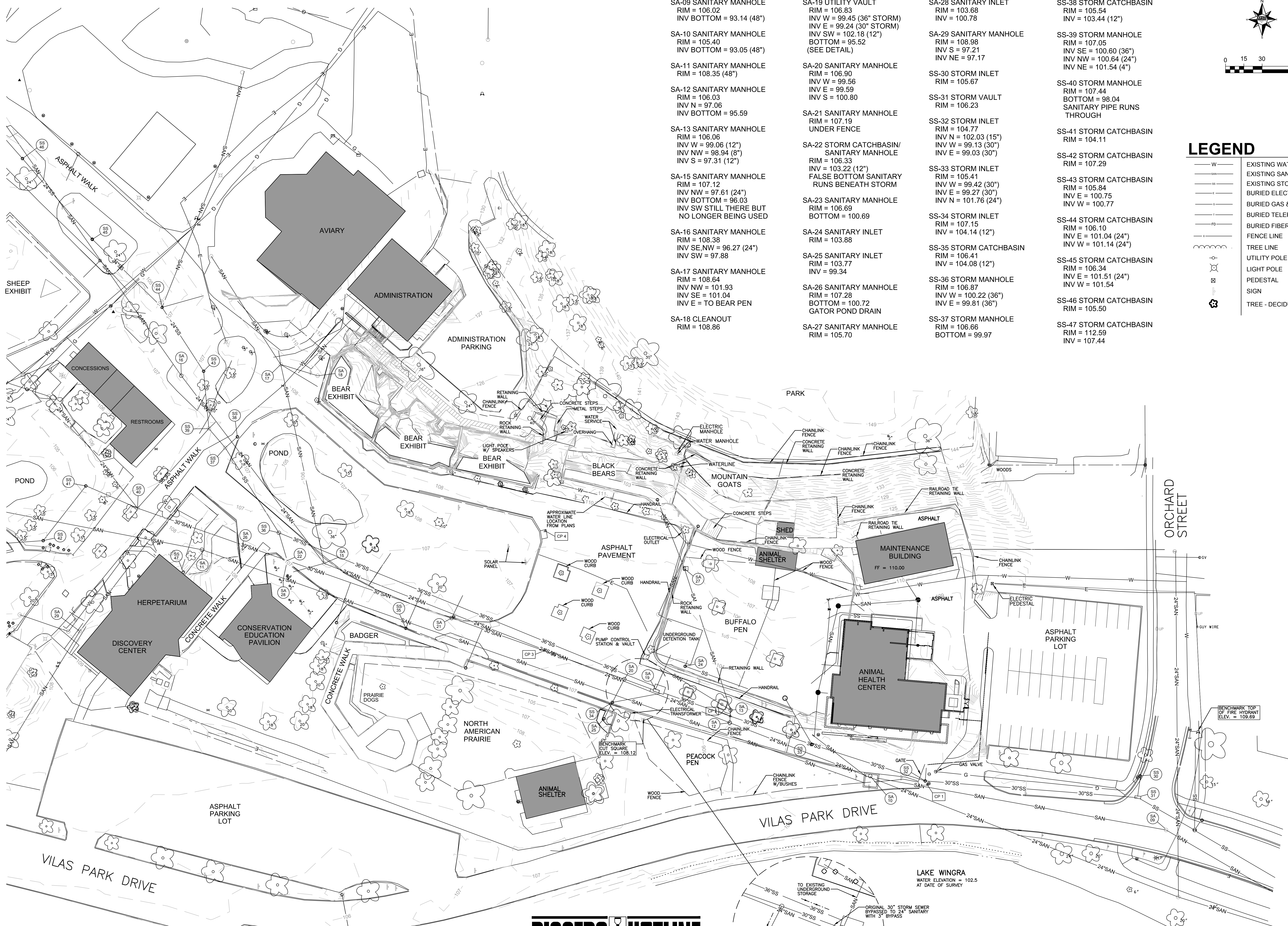
**ARCTIC ANIMAL EXHIBIT AND CONCESSIONS**  
RFB No. 313086  
Henry Vilas Zoo - County of Dane  
Henry Vilas Zoo - Department of Public Works  
702 S Randall Ave  
Madison, Wisconsin

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08.23.2013 - Design Development  
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10.21.2013 - 95% CD's  
11.13.2013 - Bid Documents

WDM No. 13046 drawn: NS  
checked: SR  
ACCESS AND STAGING PLAN

**CS1.0**





**LEGEND**

- W — EXISTING WATER MAIN
- — — EXISTING SANITARY SEWER
- — — EXISTING STORM SEWER
- — — BURIED ELECTRIC
- — — BURIED GAS & VALVE
- — — BURIED TELEPHONE
- — — BURIED FIBER OPTICS
- — — FENCE LINE
- — — TREE LINE
- ○ ○ UTILITY POLE & GUY
- ○ ○ LIGHT POLE
- ○ ○ PEDESTAL
- ○ ○ SIGN
- ○ ○ TREE - DECIDUOUS

- SA-09 SANITARY MANHOLE  
RIM = 106.02  
INV BOTTOM = 93.14 (48")
- SA-10 SANITARY MANHOLE  
RIM = 105.40  
INV BOTTOM = 93.05 (48")
- SA-11 SANITARY MANHOLE  
RIM = 108.35 (48")
- SA-12 SANITARY MANHOLE  
RIM = 106.03  
INV N = 97.06  
INV BOTTOM = 95.59
- SA-13 SANITARY MANHOLE  
RIM = 106.06  
INV W = 99.06 (12")  
INV NW = 98.94 (8")  
INV S = 97.31 (12")
- SA-15 SANITARY MANHOLE  
RIM = 107.12  
INV NW = 97.61 (24")  
INV BOTTOM = 96.03  
INV SW STILL THERE BUT  
NO LONGER BEING USED
- SA-16 SANITARY MANHOLE  
RIM = 108.38  
INV SE, NW = 96.27 (24")  
INV SW = 97.88
- SA-17 SANITARY MANHOLE  
RIM = 108.64  
INV NW = 101.93  
INV SE = 101.04  
INV E = TO BEAR PEN
- SA-18 CLEANOUT  
RIM = 108.86
- SA-19 UTILITY VAULT  
RIM = 106.83  
INV W = 99.45 (36" STORM)  
INV E = 99.24 (30" STORM)  
INV SW = 102.18 (12")  
BOTTOM = 95.52  
(SEE DETAIL)
- SA-20 SANITARY MANHOLE  
RIM = 106.90  
INV W = 99.56  
INV E = 99.59  
INV S = 100.80
- SA-21 SANITARY MANHOLE  
RIM = 107.19  
UNDER FENCE
- SA-22 STORM CATCHBASIN/  
SANITARY MANHOLE  
RIM = 106.33  
INV = 103.22 (12")  
FALSE BOTTOM SANITARY  
RUNS BENEATH STORM
- SA-23 SANITARY MANHOLE  
RIM = 106.69  
BOTTOM = 100.69
- SA-24 SANITARY INLET  
RIM = 103.88
- SA-25 SANITARY INLET  
RIM = 103.77  
INV = 99.34
- SA-26 SANITARY MANHOLE  
RIM = 107.28  
BOTTOM = 100.72  
GATOR POND DRAIN
- SA-27 SANITARY MANHOLE  
RIM = 105.70
- SA-28 SANITARY INLET  
RIM = 103.68  
INV = 100.78
- SA-29 SANITARY MANHOLE  
RIM = 108.98  
INV S = 97.21  
INV NE = 97.17
- SS-30 STORM INLET  
RIM = 105.67
- SS-31 STORM VAULT  
RIM = 106.23
- SS-32 STORM INLET  
RIM = 104.77  
INV N = 102.03 (15")  
INV W = 99.13 (30")  
INV E = 99.03 (30")
- SS-33 STORM INLET  
RIM = 105.41  
INV W = 99.42 (30")  
INV E = 99.27 (30")  
INV N = 101.76 (24")
- SS-34 STORM INLET  
RIM = 107.15  
INV = 104.14 (12")
- SS-35 STORM CATCHBASIN  
RIM = 106.41  
INV = 104.08 (12")
- SS-36 STORM MANHOLE  
RIM = 106.87  
INV W = 100.22 (36")  
INV E = 99.81 (36")
- SS-37 STORM MANHOLE  
RIM = 106.66  
BOTTOM = 99.97
- SS-38 STORM CATCHBASIN  
RIM = 105.54  
INV = 103.44 (12")
- SS-39 STORM MANHOLE  
RIM = 107.05  
INV SE = 100.60 (36")  
INV NW = 100.64 (24")  
INV NE = 101.54 (4")
- SS-40 STORM MANHOLE  
RIM = 107.44  
BOTTOM = 98.04  
SANITARY PIPE RUNS  
THROUGH
- SS-41 STORM CATCHBASIN  
RIM = 104.11
- SS-42 STORM CATCHBASIN  
RIM = 107.29
- SS-43 STORM CATCHBASIN  
RIM = 105.84  
INV E = 100.75  
INV W = 100.77
- SS-44 STORM CATCHBASIN  
RIM = 106.10  
INV SE = 101.04 (24")  
INV W = 101.14 (24")
- SS-45 STORM CATCHBASIN  
RIM = 106.34  
INV E = 101.51 (24")  
INV W = 101.54
- SS-46 STORM CATCHBASIN  
RIM = 105.50
- SS-47 STORM CATCHBASIN  
RIM = 112.59  
INV = 107.44



WDM Architects P.A.  
105 North Washington  
Wichita, KS 67202-2815  
T 316.262.4700  
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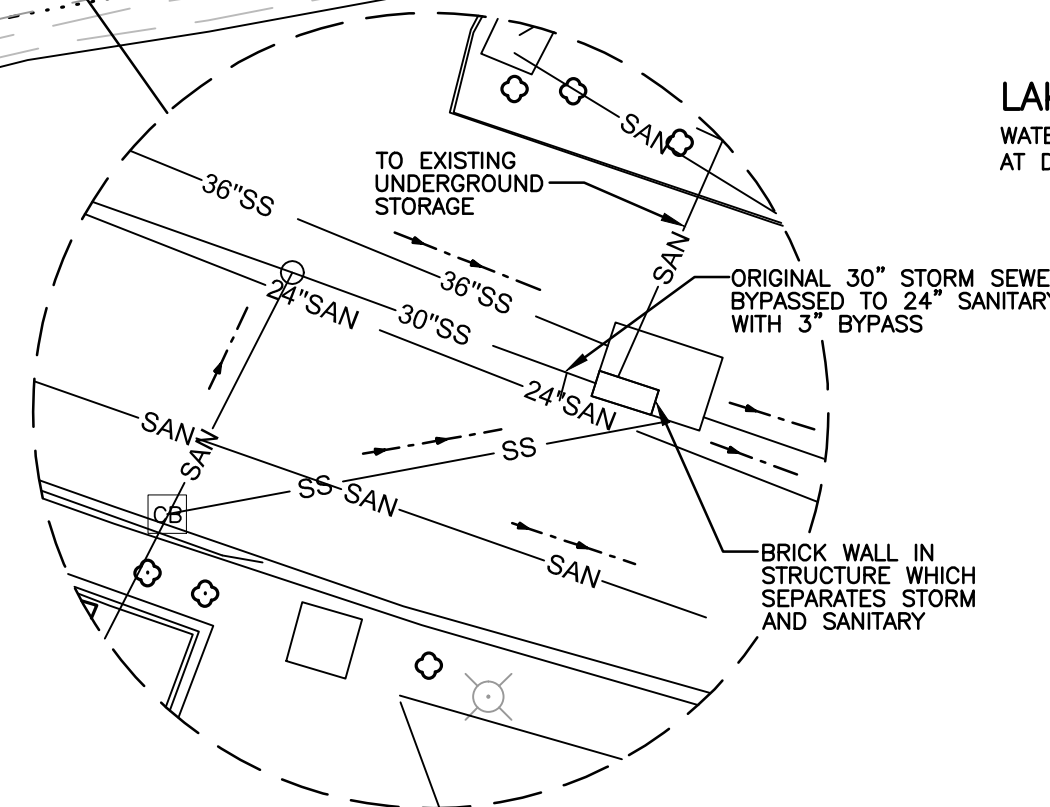


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WDM No. draw: KN  
**06441000** checked: KL  
EXISTING SITE SURVEY

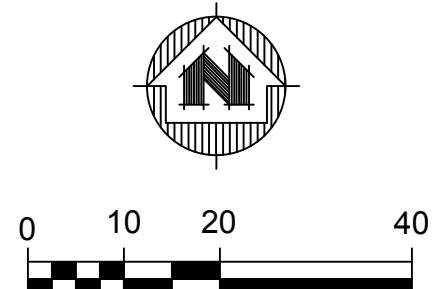
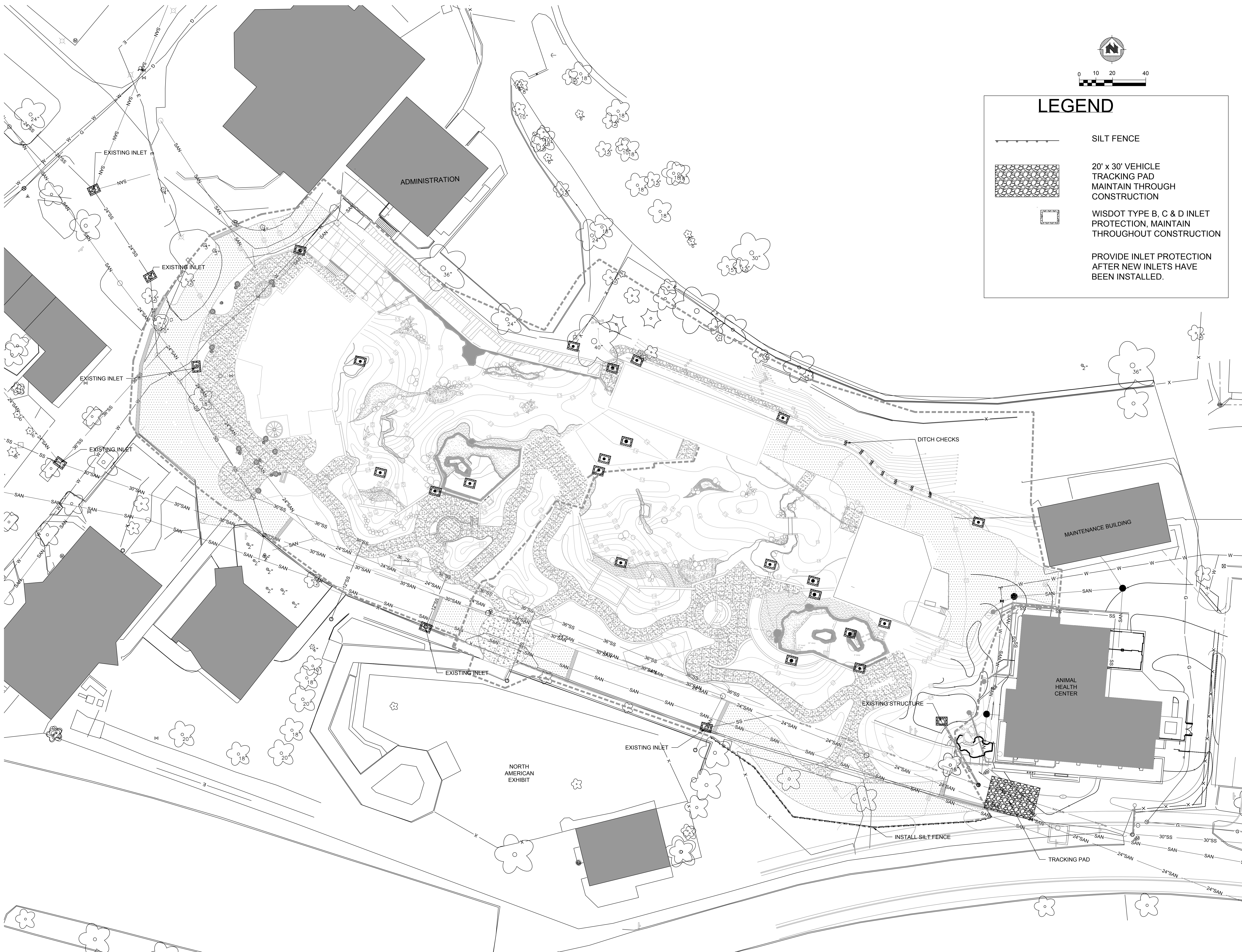
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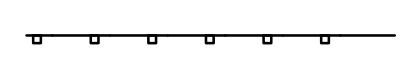
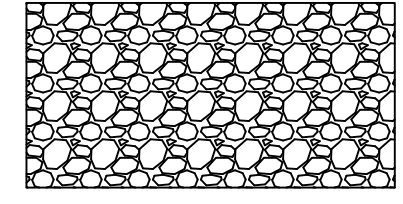
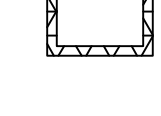
POINT/DESC.	NORTHING	EASTING	ELEVATION
CP 1 PK NAIL	476892.81	814889.34	105.06
CP 2 PK NAIL	476949.14	814728.51	106.02
CP 3 PK NAIL	477003.12	814576.45	107.14
CP 4 CUT X	477100.83	814576.78	108.32

**C1.0**





**LEGEND**

-  SILT FENCE
  -  20' x 30' VEHICLE TRACKING PAD MAINTAIN THROUGH CONSTRUCTION
  -  WISDOT TYPE B, C & D INLET PROTECTION, MAINTAIN THROUGHOUT CONSTRUCTION
- PROVIDE INLET PROTECTION AFTER NEW INLETS HAVE BEEN INSTALLED.



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Wichita, KS 67202-2815  
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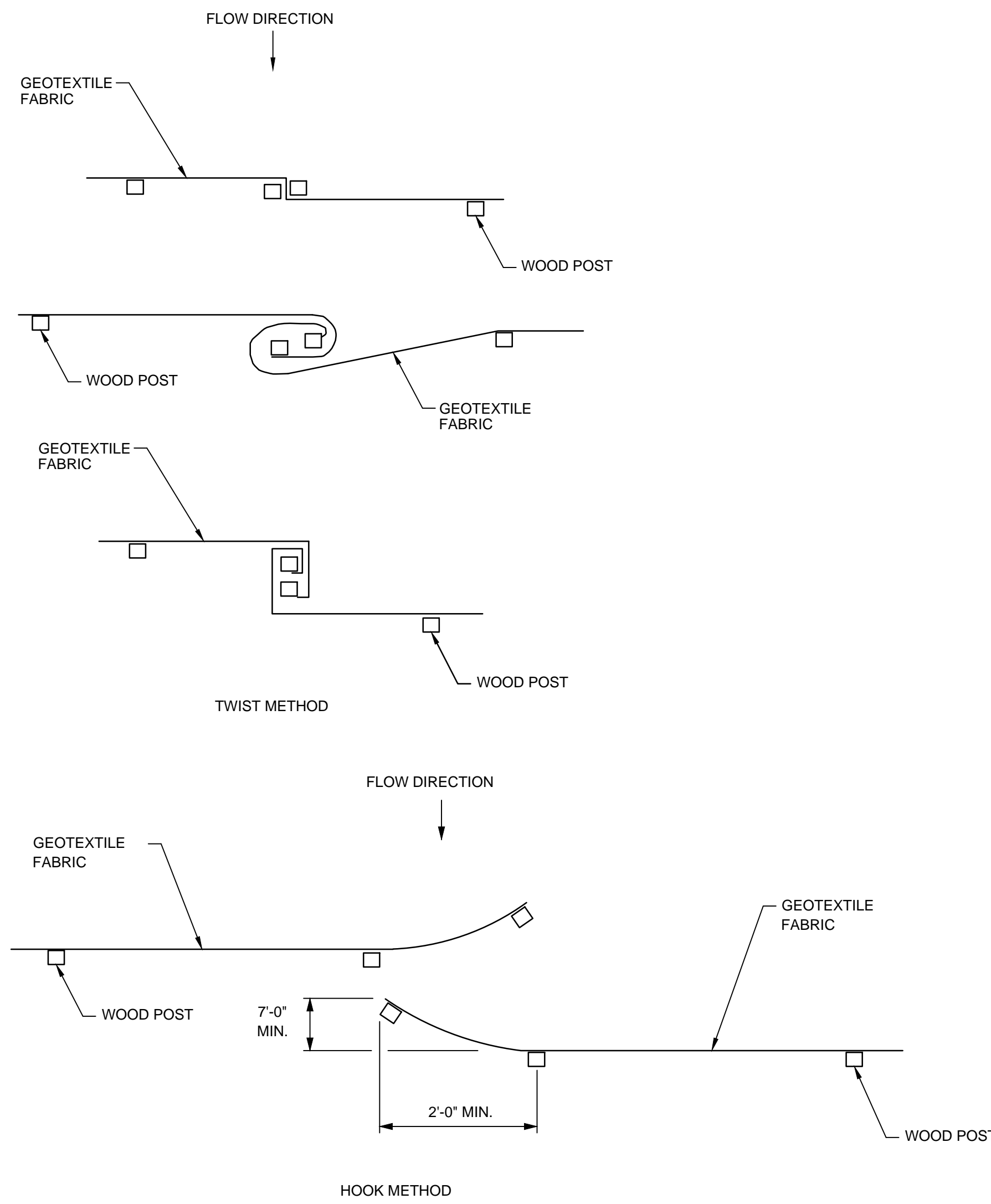
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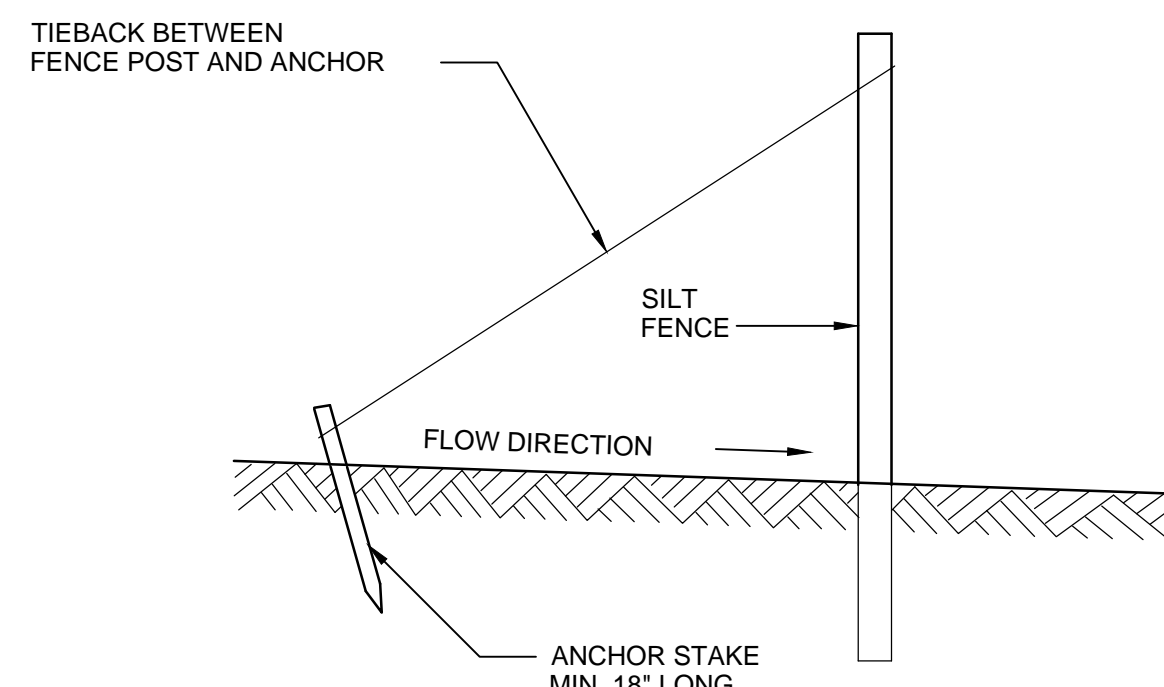
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checked: KL  
EROSION CONTROL

**C1.1**

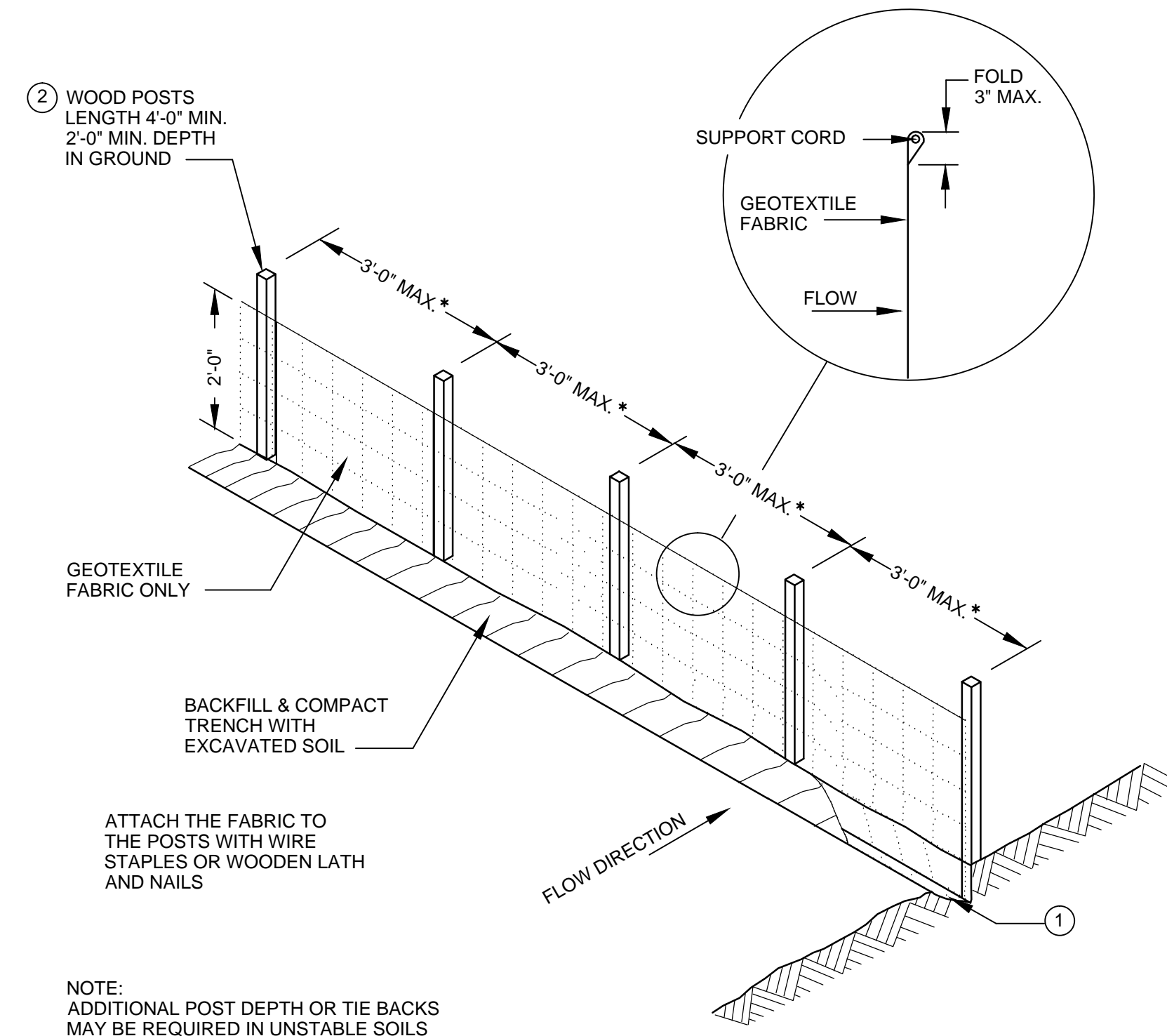




**JOINING TWO LENGTHS OF SILT FENCE** ③

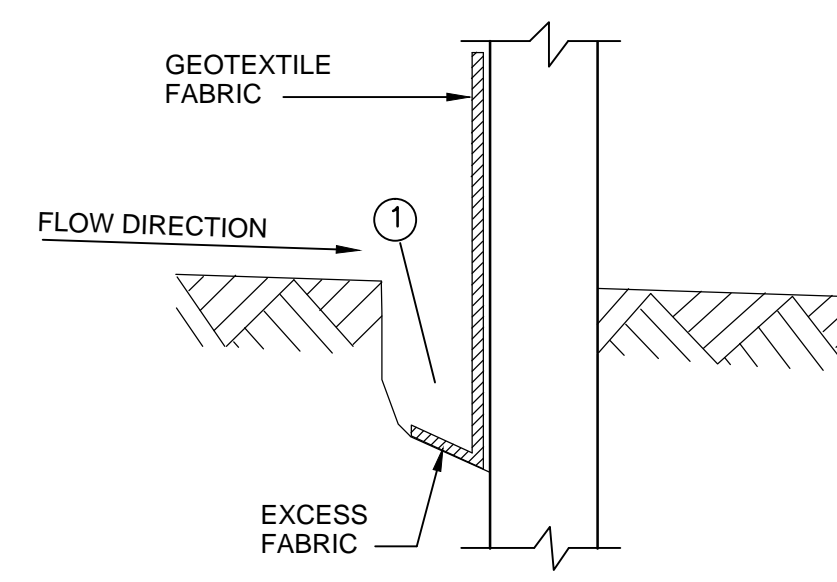


**SILT FENCE TIE BACK**  
(WHEN REQUIRED BY THE ENGINEER)

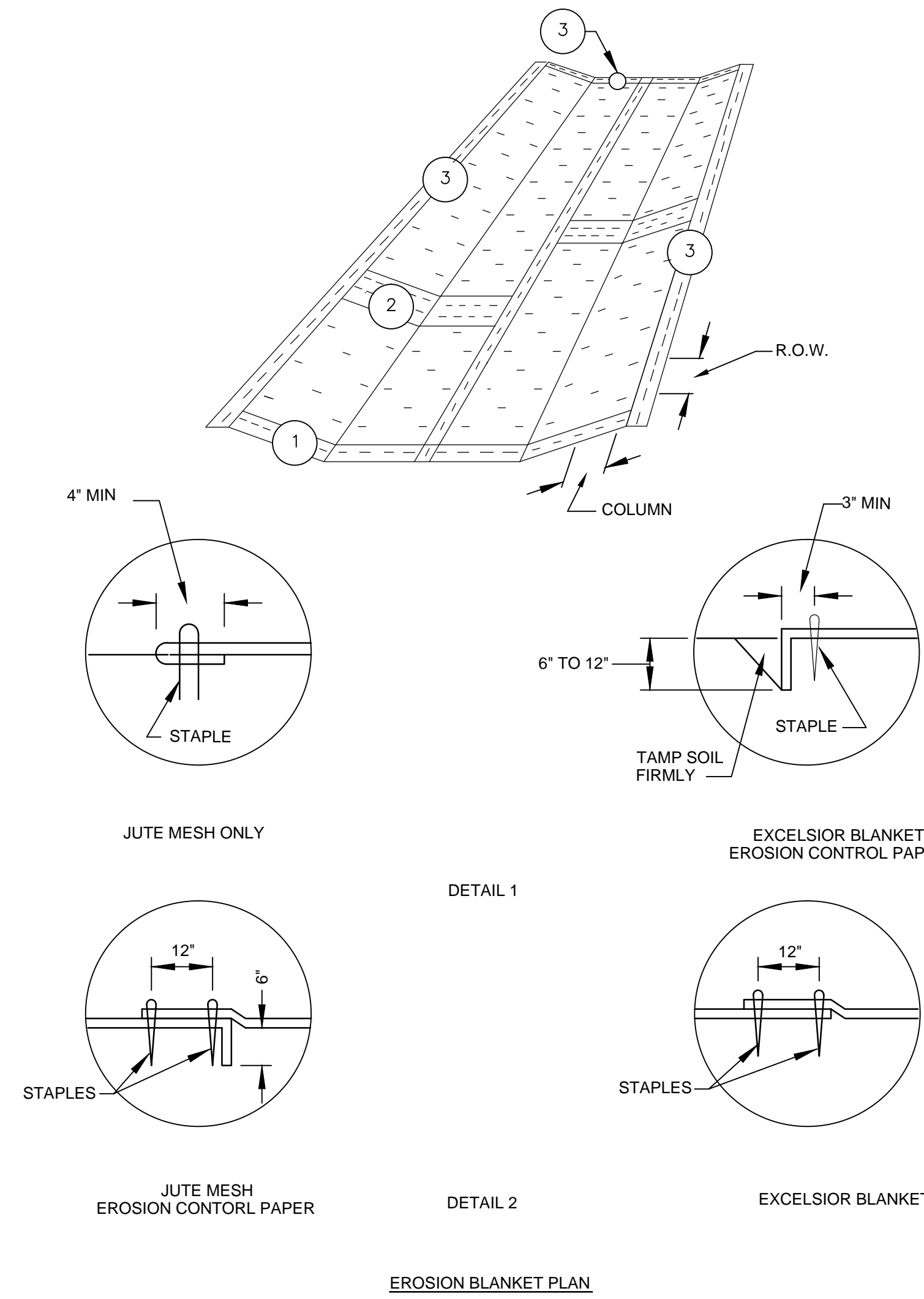


NOTE:  
ADDITIONAL POST DEPTH OR TIE BACKS  
MAY BE REQUIRED IN UNSTABLE SOILS  
8'-0\"/>

**SILT FENCE**



**TRENCH DETAIL**



- GENERAL NOTES
- 1 TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
  - 2 WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/2" x 1 1/2" OF OAK OR HICKORY
  - 3 CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) TWIST METHOD -- OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.



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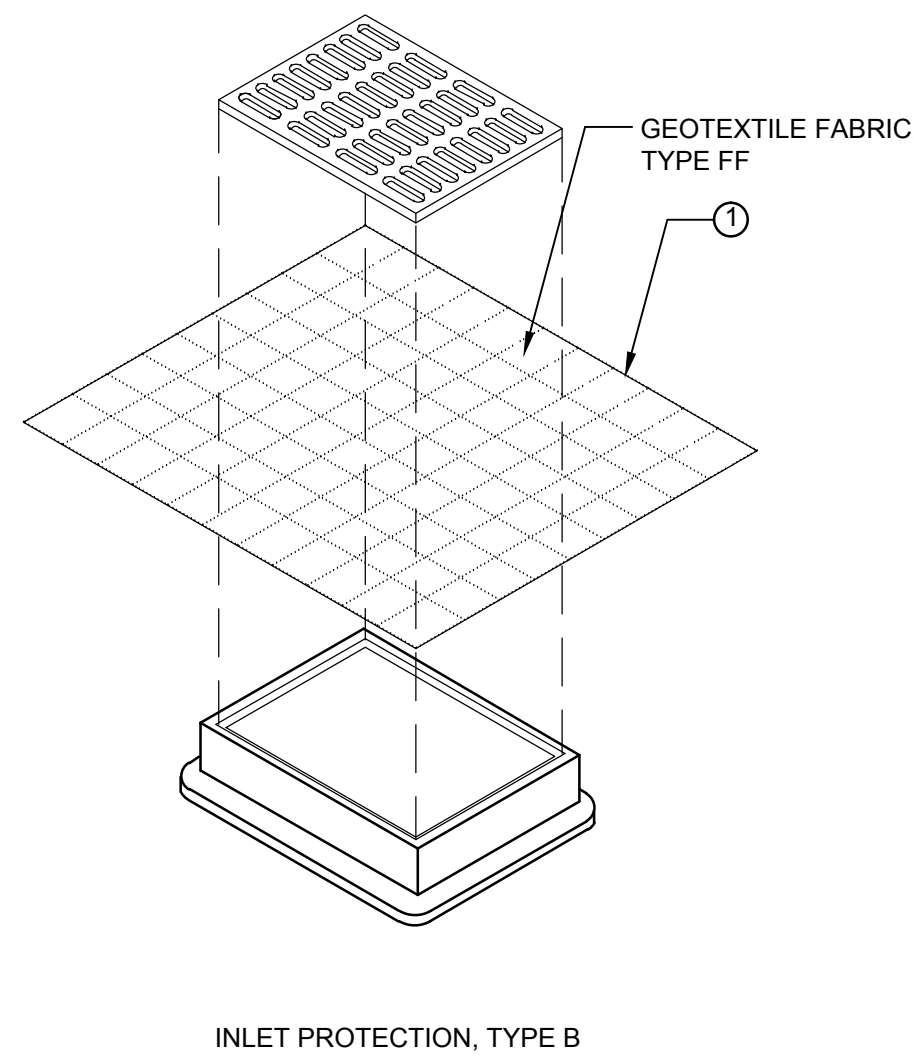
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checked: KL  
EROSION CONTROL DETAIL - 1

**C1.2**





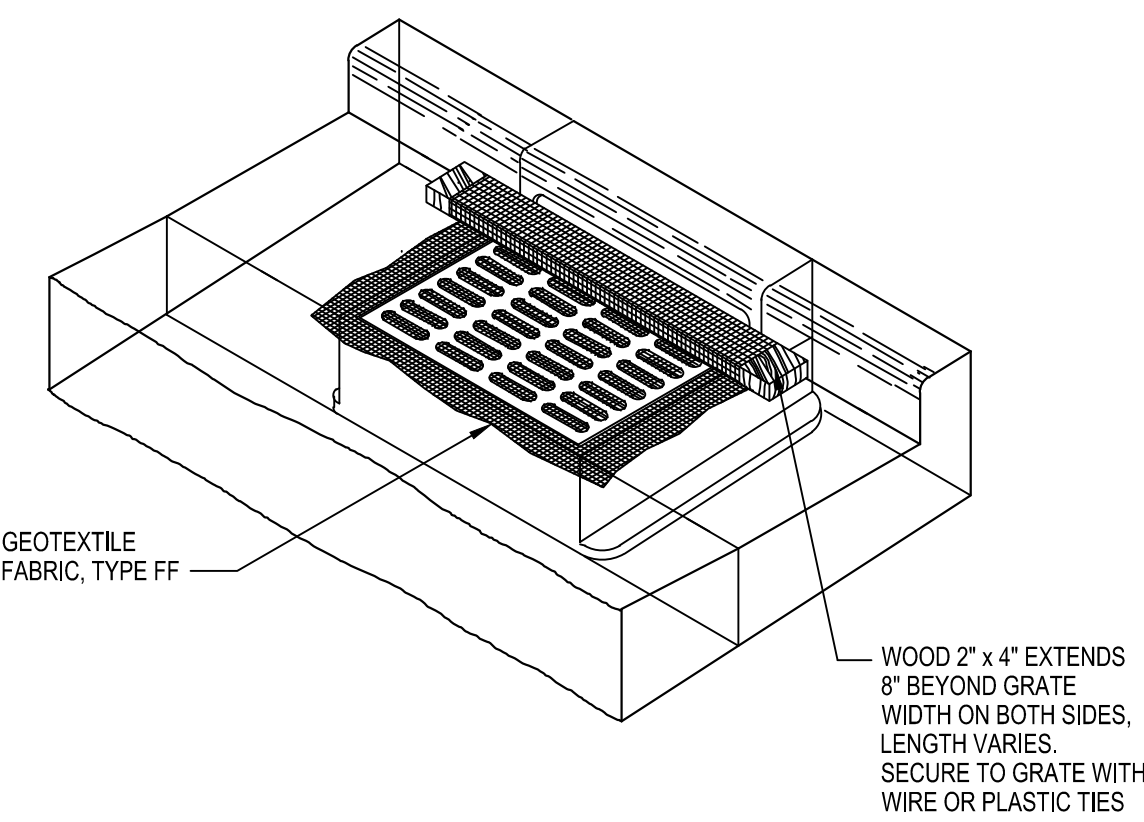
INLET PROTECTION, TYPE B

INSTALLATION NOTES:  
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.  
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE,  
USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT  
ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**INLET PROTECTION, TYPE B**

SCALE: NONE

(WITHOUT CURB BOX)  
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



GEOTEXTILE FABRIC, TYPE FF

WOOD 2' x 4' EXTENDS  
8' BEYOND GRATE  
WIDTH ON BOTH SIDES.  
LENGTH VARIES.  
SECURE TO GRATE WITH  
WIRE OR PLASTIC TIES

INSTALLATION NOTES:  
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.  
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE,  
USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT  
ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

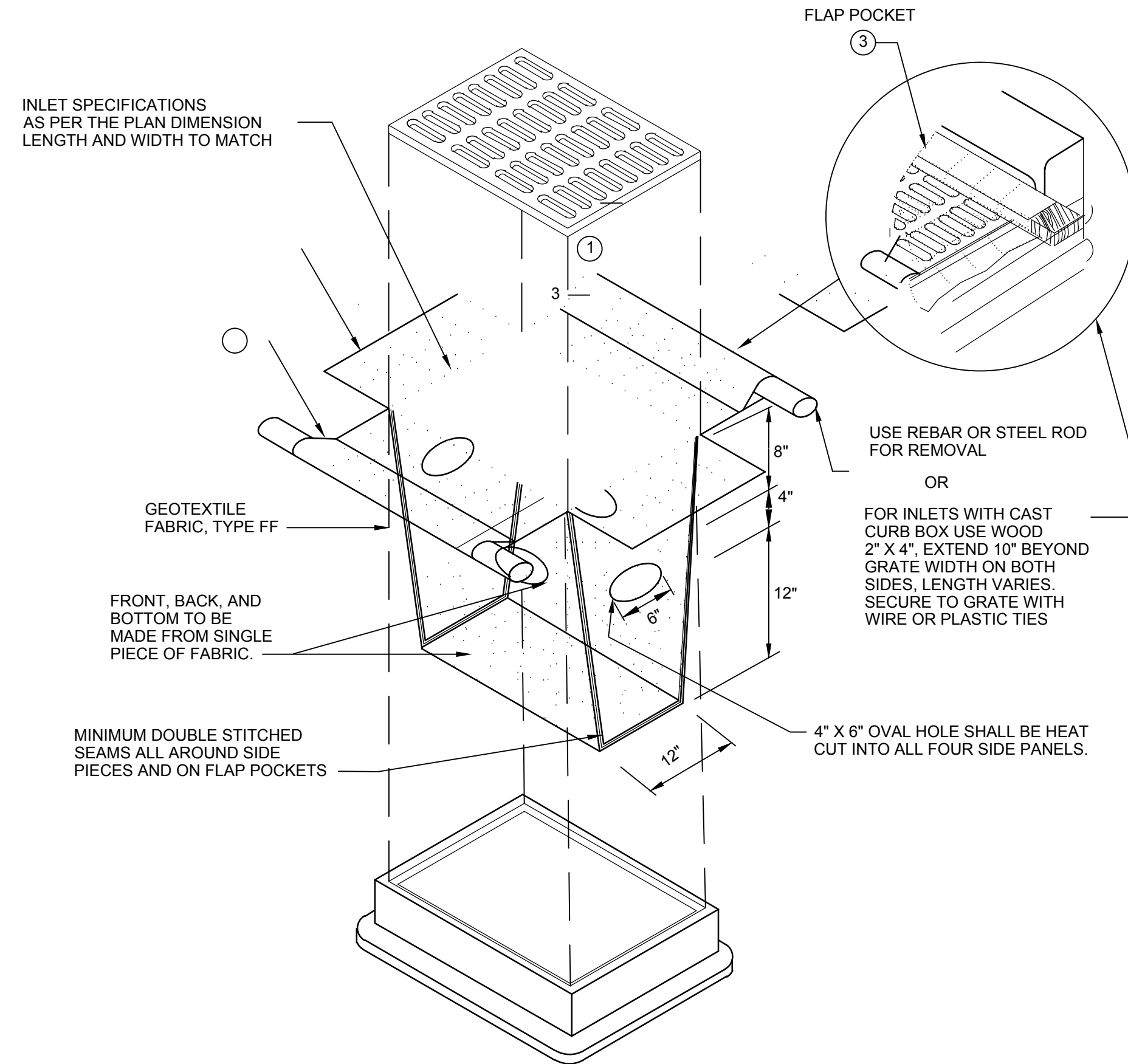
**INLET PROTECTION, TYPE C**

SCALE: NONE

**GENERAL NOTES - INLET PROTECTION**

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.  
MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.  
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 1 FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- 2 FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- 3 FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



INLET SPECIFICATIONS  
AS PER THE PLAN DIMENSION  
LENGTH AND WIDTH TO MATCH

GEOTEXTILE FABRIC, TYPE FF

MINIMUM DOUBLE STITCHED  
SEAMS ALL AROUND SIDE  
PIECES AND ON FLAP POCKETS

FLAP POCKET

USE REBAR OR STEEL ROD  
FOR REMOVAL  
OR  
FOR INLETS WITH CAST  
CURB BOX USE WOOD  
2' X 4'. EXTEND 10" BEYOND  
GRATE WIDTH ON BOTH  
SIDES. LENGTH VARIES.  
SECURE TO GRATE WITH  
WIRE OR PLASTIC TIES

4' X 6' OVAL HOLE SHALL BE HEAT  
CUT INTO ALL FOUR SIDE PANELS.

INSTALLATION NOTES:  
DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30",  
MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

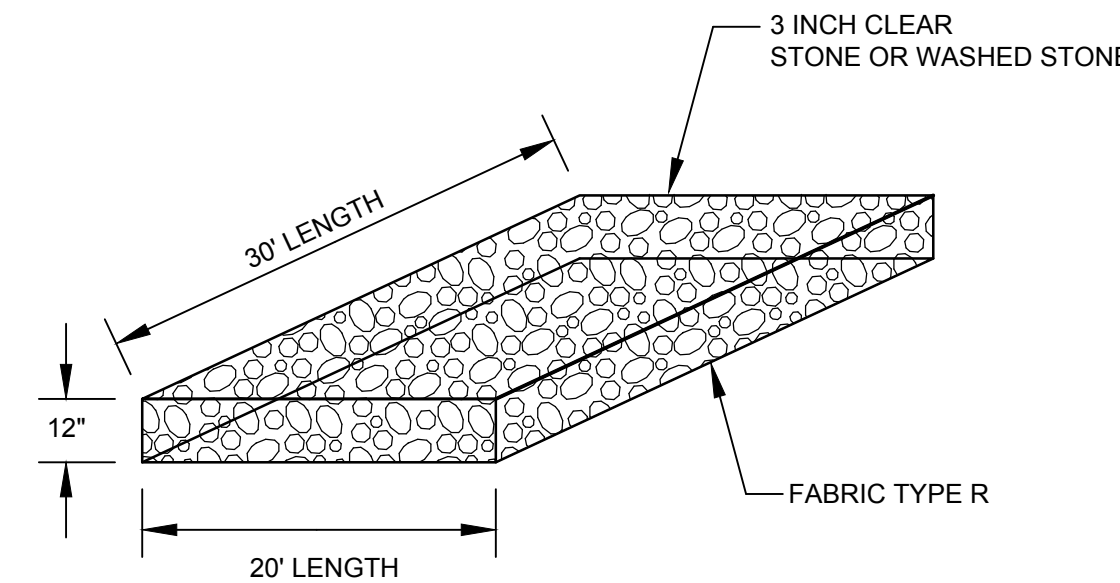
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE  
INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES,  
OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING  
PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED  
AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

**INLET PROTECTION, TYPE D**

SCALE: NONE

(CAN BE INSTALLED IN ANY INLET TYPE WITH  
OR WITHOUT A CURB BOX AS PER NOTE)



**STONE TRACKING PAD DETAIL**

SCALE: NONE

**CONSTRUCTION SITE EROSION CONTROL REQUIREMENTS**

1.) SECTION NR218.46 OF WISCONSIN STATE ADMINISTRATIVE CODE IDENTIFIES REQUIREMENTS FOR CONSTRUCTION SITE AND POST-CONSTRUCTION EROSION CONTROL. IT IS THE INTENT OF THESE PLANS TO SATISFY THESE REQUIREMENTS. THE METHODS AND STRUCTURES USED TO CONTROL EROSION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL IMPLEMENT AN APPROPRIATE MEANS OF CONTROLLING EROSION DURING SITE OPERATION AND UNTIL THE VEGETATION IS RE-ESTABLISHED. ADJUSTMENTS TO THE CONTROL SYSTEM SHALL BE MADE AS REQUIRED.

2.) ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE WISCONSIN DNR'S CONSERVATION PRACTICE STANDARDS. THESE STANDARDS ARE PERIODICALLY UPDATED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND REFERENCE THE MOST RECENTLY RELEASED STANDARD.

3.) THE INFORMATION IS ONLY ONE PART OF THE OVERALL EROSION CONTROL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY ALSO BE SHOWN ON THE PLAN SHEETS AND IN THE ACCOMPANYING SPECIFICATIONS.

4.) ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED IN WRITING BY THE STATE OR LOCAL INSPECTORS, OR THE OWNER'S ENGINEER, SHALL BE INSTALLED WITHIN 24 HOURS.

5.) THE AREA OF EROSION EXPOSED TO THE ELEMENTS BY GRUBBING, EXCAVATION, TRENCHING, BORROW AND FILL OPERATIONS AT ANY ONE TIME SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE. FOR ANY DISTURBED AREA THAT REMAINS INACTIVE FOR GREATER THAN 7 WORKING DAYS, OR WHERE GRADING WORK EXTENDS BEYOND THE PERMANENT SEEDING DEADLINES, THE SITE MUST BE TREATED WITH TEMPORARY STABILIZATION MEASURES SUCH AS SOIL TREATMENT, TEMPORARY SEEDING AND/OR MULCHING. ALL DISTURBED AREAS SHALL BE TREATED WITH PERMANENT STABILIZATION MEASURES WITHIN 3 WORKING DAYS OF FINAL GRADING.

6.) ALL EROSION CONTROL MEASURES AND STRUCTURES FOLLOWING THE SITE MUST BE INSPECTED AT LEAST WEEKLY OR WITHIN 24 HOURS OF THE TIME 0.5 INCHES OF RAIN IS PRODUCED. ALL MAINTENANCE WILL FOLLOW AN INSPECTION WITHIN 24 HOURS. THIS APPROACH ACKNOWLEDGES THE DIFFICULTY OF WORKING IN WET CONDITIONS AS NECESSARY FOR PREVENTING THE IRRETRIEVABLE "FIRST FLUSH" OF SEDIMENT INTO ADJACENT WATERWAYS, DEGRADING WATER QUALITY AND FISH HABITAT.

7.) ALL EROSION CONTROL DEVICES SHALL BE PROPERLY INSTALLED PRIOR TO ANY SOIL DISTURBANCE.

8.) GRUBBING AND GRADING OPERATIONS SHALL BE PERFORMED IN PROPER SEQUENCE WITH OTHER WORK TO MINIMIZE EROSION.

9.) ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, TOXIC MATERIALS, OR HAZARDOUS MATERIALS) SHALL BE PROPERLY DISPOSED OF AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.

10.) WIND EROSION SHALL BE KEPT TO A MINIMUM DURING CONSTRUCTION. WATERING, MULCH, OR A TACKING AGENT MAY NEED TO BE UTILIZED TO PROTECT NEARBY RESIDENCES AND WATER RESOURCES.

11.) CHANNELIZED RUNOFF FROM ADJACENT AREAS PASSING THROUGH THE SITE SHALL BE DIVERTED AROUND DISTURBED AREAS, IF PRACTICAL.

12.) THE CONTRACTOR SHALL TAKE ALL POSSIBLE PRECAUTIONS TO PREVENT SOILS FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. PAVED SURFACES ADJACENT TO CONSTRUCTION SITE VEHICLE ACCESS SHALL BE SWEEP AND / OR SCRAPED (NOT FLUSHED) PERIODICALLY TO REMOVE SOIL, DIRT AND / OR DUST.

13.) EROSION CONTROLS SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF TEMPORARY STOCKPILES. ANY SOIL STOCKPILE THAT REMAINS FOR MORE THAN 30 DAYS SHALL BE COVERED OR TREATED WITH STABILIZATION PRACTICES SUCH AS TEMPORARY OR PERMANENT SEEDING AND MULCHING. ALL STOCK PILES SHALL BE PLACED AT LEAST 75 FEET FROM STREAMS OR WETLANDS.

14.) EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.).

a. PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.  
b. BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.

c. DISCHARGE OF TRENCH WATER OR DEWATERING EFFLUENT MUST BE PROPERLY TREATED TO REMOVE SEDIMENT IN ACCORDANCE WITH THE WDNR CONSERVATION PRACTICE STANDARD 1061 - DEWATERING OR A SUBSEQUENT WDNR DEWATERING STANDARD PRIOR TO DISCHARGE INTO A STORM SEWER, DITCH, DRAINAGEWAY, OR WETLAND OR LAKE.

15.) ALL DRAINAGE CULVERTS, STORM DRAIN INLETS, MANHOLES, OR ANY OTHER EXISTING STRUCTURES WHICH COULD BE DAMAGED BY SEDIMENTATION SHALL BE PROTECTED ACCORDING TO THE VARIOUS METHODS PROVIDED IN THE PRINTED CONSERVATION PRACTICE STANDARDS.

16.) ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR STABILIZATION MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.

17.) THE FIRST SIX WEEKS AFTER INITIAL STABILIZATION (E.G. PLACEMENT OF SEED AND MULCH, EROSION MAT, SOD) A DISTURBED AREA SHALL INCLUDE WATERING PROVISIONS OF ALL NEWLY SEEDED AND MULCHED AREAS WHENEVER 7 DAYS ELAPSE WITHOUT A RAIN EVENT.

18.) WHEN THE DISTURBED AREA HAS BEEN STABILIZED BY PERMANENT VEGETATION OR OTHER MEANS, TEMPORARY BMP'S SUCH AS SILT FENCES, STRAW BALES, AND SEDIMENT TRAPS SHALL BE REMOVED AND THESE AREAS STABILIZED.

19.) ALL TEMPORARY BEST MANAGEMENT PRACTICES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED.

20.) ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITH SEED AND MULCH UNLESS OTHERWISE SPECIFIED. A MINIMUM OF 4 TO 6 INCHES OF TOPSOIL SHALL BE APPLIED TO ALL AREAS TO BE SEEDED OR SODDED.



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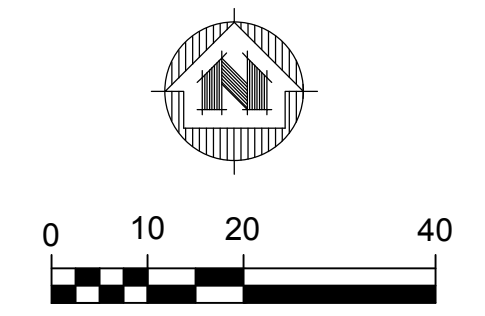
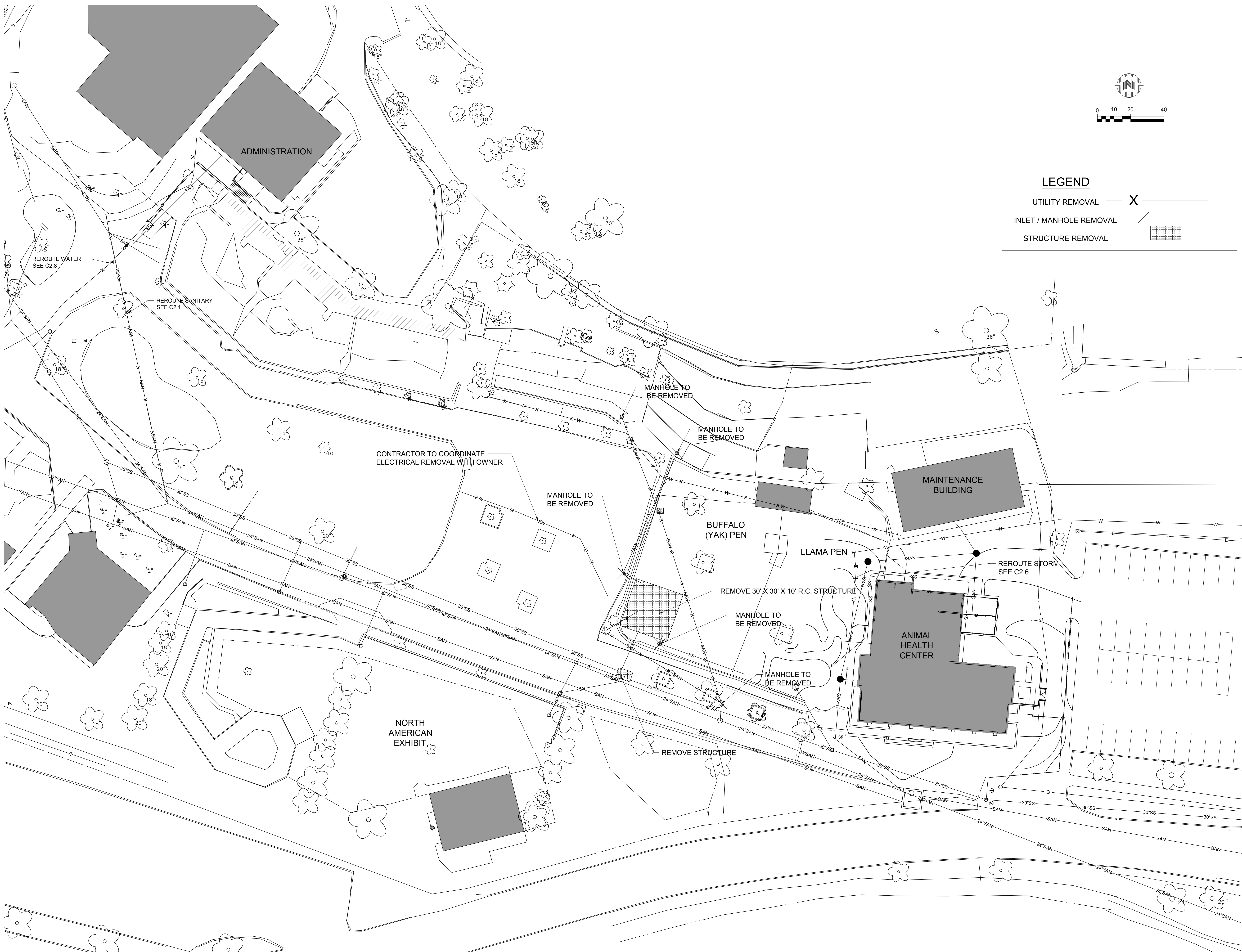
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10.07.2013 - Pricing Set  
10.21.2013 - 95% CD's  
11.13.2013 - Bid Documents

WDM No. 06441000 draw: KN  
checked: KL

EROSION CONTROL DETAILS - 2

**C1.3**





LEGEND	
UTILITY REMOVAL	— X —
INLET / MANHOLE REMOVAL	⊗
STRUCTURE REMOVAL	▣



WDM Architects P.A.  
 105 North Washington  
 Wichita, KS 67202-2815  
 T 316.262.4700  
 F 316.262.0002  
 wdmarchitects.com



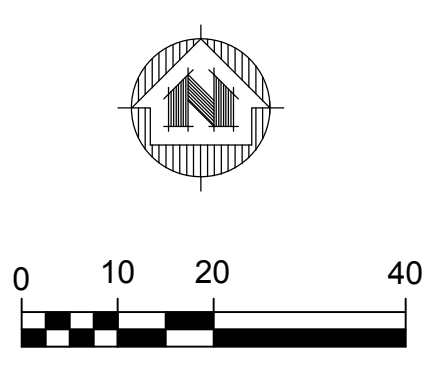
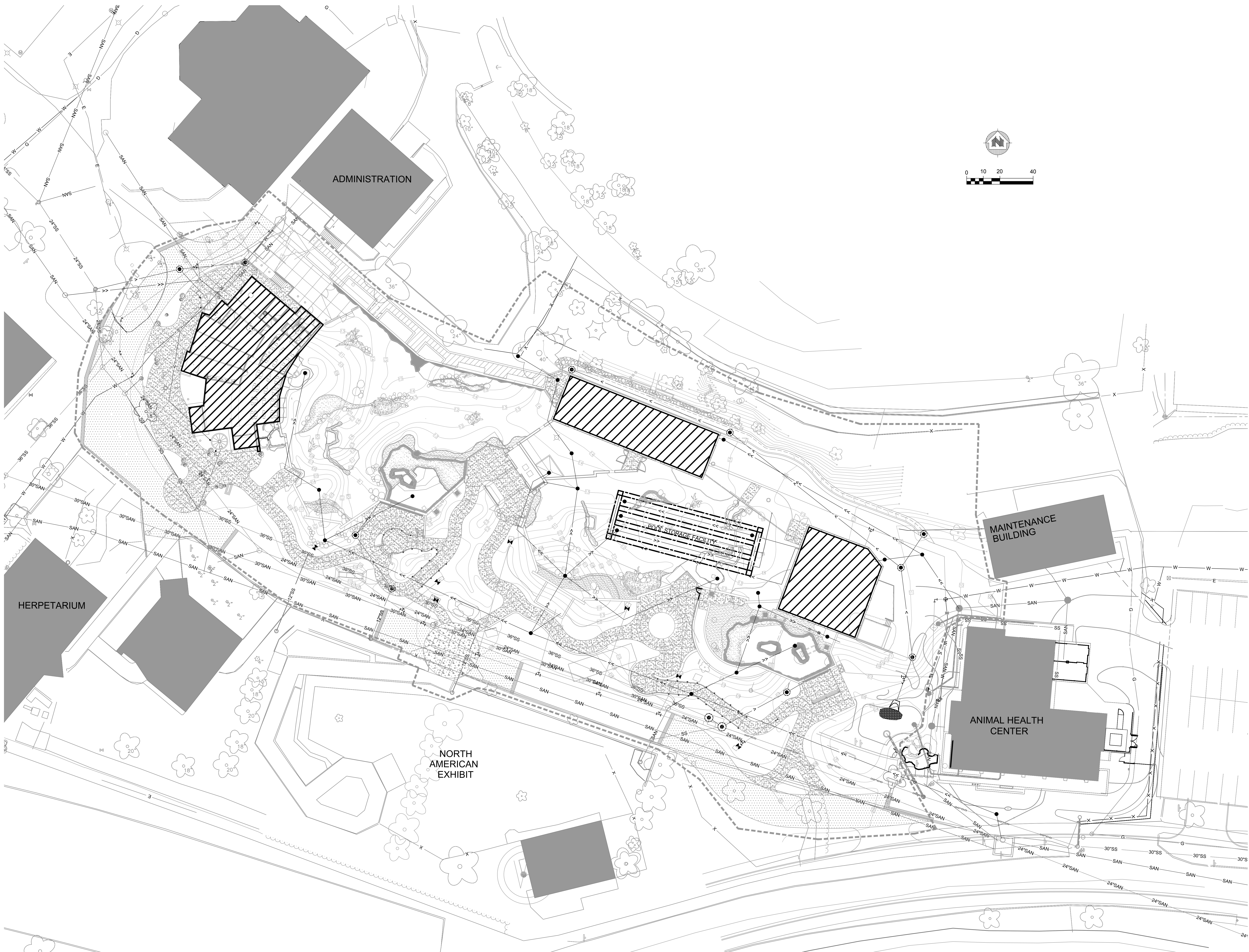
**ARCTIC ANIMAL EXHIBIT AND CONCESSIONS**  
 RFB No. 313086  
 Henry Vilas Zoo - County of Dane  
 Department of Public Works  
 702 S Randall Ave  
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**C1.4**





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 105 North Washington  
 Wichita, KS 67202-2815  
 T 316.262.4700  
 F 316.262.0002  
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 draw: KN  
 checked: KL  
 Utility Overview

**C2.0**







STRUCTURE TABLE						
STRUCTURE NAME:	NORTHING	EASTING	DETAILS:	PIPES IN:	PIPES OUT	CASTING
SA 1.10	476915.35	814839.15	TYPE 4 RIM = 105.64 INV IN = 96.75 INV OUT = 96.80	Pipe 2, 48" INV IN =96.75	Pipe 1, 4" INV OUT =96.80	R-1540*
SA 1.20	476987.71	814655.51	TYPE 4 RIM = 109.71 INV IN = 99.00 INV IN = 98.07 INV IN = 96.98 INV OUT = 96.95	Pipe 4, 12" INV IN =99.00 Pipe 3, 10" INV IN =98.07 Pipe 10, 48" INV IN =96.98	Pipe 2, 48" INV OUT =96.95	R-1540*
SA 1.21	477000.54	814682.69	TYPE 1 RIM = 111.00 INV IN = 101.25 INV IN = 103.00 INV OUT = 99.25	Pipe 6, 8" INV IN =101.25 Pipe 5, 4" INV IN =103.00	Pipe 4, 12" INV OUT =99.25	R-2578 TYPE C
SA 1.22	477016.63	814717.84	POOL DRAIN RIM = 104.50 INV OUT = 103.58		Pipe 5, 4" INV OUT =103.58	POOL DRAIN SEE GRATE DETAIL LSS4.0
SA 1.23	477040.32	814696.52	TYPE 1 RIM = 113.25 INV IN = 105.35 INV IN = 105.30 INV OUT = 105.25	Pipe 9, 4" INV IN =105.35 Pipe 7, 4" INV IN =105.30	Pipe 6, 8" INV OUT =105.25	R-2578 TYPE C
SA 1.24	477048.48	814695.67	TYPE 1 RIM = 112.00 INV OUT = 105.40		Pipe 9, 4" INV OUT =105.40	R-4340-B BOLT DOWN
SA 1.25	477022.12	814737.32	TYPE 1 RIM = 113.99 INV IN = 105.65 INV OUT = 105.55	Pipe 8, 4" INV IN =105.65	Pipe 7, 4" INV OUT =105.55	R-2578 TYPE C
SA 1.30	477024.26	814558.85	TYPE 4 RIM = 107.50 INV IN = 97.12 INV IN = 99.50 INV IN = 100.00 INV OUT = 97.09	Pipe 23, 48" INV IN =97.12 Pipe 12, 24" INV IN =99.50 Pipe 11, 4" INV IN =100.00	Pipe 10, 48" INV OUT =97.09	R-1540*
SA 1.31	477058.76	814579.50	TYPE 1 RIM = 104.00 INV IN = 100.10 INV IN = 100.10 INV IN = 100.10 INV OUT = 100.00	Pipe 15, 12" INV IN =100.10 Pipe 13, 4" INV IN =100.10 Pipe 20, 4" INV IN =100.10	Pipe 12, 24" INV OUT =100.00	R-4340-B BOLT DOWN
SA 1.32	477057.10	814671.11	POOL DRAIN RIM = 80.94 INV OUT = 107.58		Pipe 14, 4" INV OUT =107.58	POOL DRAIN SEE GRATE DETAIL LSS4.0
SA 1.33	477111.31	814587.01	TYPE 1 RIM = 113.00 INV IN = 109.00 INV IN = 109.00 INV OUT = 108.00	Pipe 17, 4" INV IN =109.00 Pipe 16, 4" INV IN =109.00	Pipe 15, 12" INV OUT =108.00	R-4340-B BOLT DOWN
SA 1.34	477132.47	814583.42	TYPE 1 RIM = 113.75 INV IN = 110.50 INV OUT = 110.40	Pipe 18, 4" INV IN =110.50	Pipe 17, 4" INV OUT =110.40	R-2578 BOLT DOWN TYPE C

STRUCTURE TABLE						
STRUCTURE NAME:	NORTHING	EASTING	DETAILS:	PIPES IN:	PIPES OUT	CASTING
SA 1.35	477176.60	814574.97	TYPE 1 RIM = 114.15 INV OUT = 111.15	Pipe 60, 4" INV OUT =111.25	Pipe 19, 4" INV OUT =111.15	R-2578 TYPE C
SA 1.36	477190.93	814551.15	TYPE 1 RIM = 125.00 INV OUT = 111.50		Pipe 60, 4" INV OUT =111.50	R-2578 TYPE C
SA 1.37	477115.17	814566.74	6" TRENCH DRAIN RIM = 109.57 INV OUT = 109.20		Pipe 16, 4" INV OUT =109.20	R-4999-AX BOLT DOWN TYPE Q
SA 1.38	477120.73	814569.80	POOL DRAIN RIM = 111.85 INV OUT = 109.20		Pipe 22, 4" INV OUT =109.20	POOL DRAIN SEE GRATE DETAIL LSS4.0
SA 1.40	477080.17	814434.92	TYPE 4 RIM = 111.00 INV IN = 99.28 INV IN = 99.95 INV OUT = 97.28	Pipe 25, 12" INV IN =99.28 Pipe 24, 4" INV IN =99.95	Pipe 23, 48" INV OUT =97.28	R-1540*
SA 1.41	477106.66	814487.67	POOL DRAIN RIM = 104.10 INV OUT = 102.58		Pipe 24, 4" INV OUT =102.58	POOL DRAIN SEE GRATE DETAIL LSS4.0
SA 1.42	477110.49	814431.38	TYPE 1 RIM = 104.00 INV IN = 100.30 INV OUT = 100.20	Pipe 26, 4" INV IN =100.30	Pipe 25, 12" INV OUT =100.20	R-4340-B BOLT DOWN
SA 1.43	477180.79	814423.00	POOL DRAIN RIM = 107.68 INV OUT = 106.83		Pipe 27, 4" INV OUT =106.83	POOL DRAIN SEE GRATE DETAIL LSS4.0
SA 1.50	477071.52	814794.45	TYPE 1 W/ OUTSIDE DROP RIM = 110.50 INV IN = 102.80 INV IN = 107.33 INV OUT = 102.60	Pipe 31, 4" INV IN =102.80 Pipe 33, 4" INV IN =107.33	Pipe 30, 6" INV OUT =102.60	R-1540*
SA 1.51	477068.53	814771.86	TYPE 1 RIM = 111.33 INV IN = 103.00 INV OUT = 102.98	Pipe 32, 4" INV IN =103.00	Pipe 31, 4" INV OUT =102.98	R-1540*
SA 1.52	477140.70	814674.91	TYPE 1 RIM = 114.25 INV IN = 108.20 INV OUT = 108.10	Pipe 34, 4" INV IN =108.20	Pipe 33, 4" INV OUT =108.10	R-1540*

\* SANITARY MANHOLES TO INCLUDE CHIMNEY SEAL



we do more



ARCTIC ANIMAL EXHIBIT AND CONCESSIONS  
RFB No. 313086  
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Department of Public Works  
Henry Vilas Zoo  
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checked: KL  
SANITARY STR. TABLE

C2.2



Pipe Table				
NAME	SIZE & MATERIAL	LENGTH	SLOPE	VALVES
Pipe 1	4.0 inch PVC Pipe	15'	0.23%	4" Asahi-America Butterfly Valve Type 57
Pipe 2	48 inch Concrete Pipe	197'	0.10%	
Pipe 3	10.0 inch PVC Pipe	16'	0.61%	
Pipe 4	12.0 inch PVC Pipe	30'	0.83%	
Pipe 5	4.0 inch PVC Pipe	39'	1.51%	4" Asahi-America Gate Valve Type P
Pipe 6	8.0 inch PVC Pipe	42'	9.50%	
Pipe 7	4.0 inch PVC Pipe	45'	0.56%	
Pipe 8	4.0 inch PVC Pipe	8'	0.60%	
Pipe 9	4.0 inch PVC Pipe	8'	0.61%	
Pipe 10	48 inch Concrete Pipe	103'	0.11%	
Pipe 11	4.0 inch PVC Pipe	22'	27.66%	
Pipe 12	24.0 inch PVC Pipe	40'	1.24%	
Pipe 13	4.0 inch PVC Pipe	44'	4.30%	
Pipe 14	4.0 inch PVC Pipe	61'	9.09%	4" Asahi-America Gate Valve Type P
Pipe 15	12.0 inch PVC Pipe	53'	14.88%	
Pipe 16	4.0 inch PVC Pipe	21'	0.97%	
Pipe 17	4.0 inch PVC Pipe	22'	6.52%	
Pipe 18	4.0 inch PVC Pipe	24'	1.02%	
Pipe 19	4.0 inch PVC Pipe	25'	1.58%	
Pipe 20	4.0 inch PVC Pipe	40'	19.64%	

Pipe Table				
NAME	SIZE & MATERIAL	LENGTH	SLOPE	VALVES
Pipe 21	4.0 inch PVC Pipe	31'	3.28%	4" Asahi-America Gate Valve Type P
Pipe 22	4.0 inch PVC Pipe	11'	1.82%	
Pipe 23	48 inch Concrete Pipe	136'	0.12%	
Pipe 24	4.0 inch PVC Pipe	59'	4.46%	4" Asahi-America Gate Valve Type P
Pipe 25	12.0 inch PVC Pipe	31'	3.01%	
Pipe 26	4.0 inch PVC Pipe	24'	7.00%	
Pipe 27	4.0 inch PVC Pipe	59'	8.21%	4" Asahi-America Gate Valve Type P
Pipe 28	4.0 inch PVC Pipe	19'	0.52%	
Pipe 29	12.0 inch PVC Pipe	82'	8.53%	
Pipe 30	6.0 inch PVC Pipe	40'	7.51%	
Pipe 31	4.0 inch PVC Pipe	23'	0.79%	
Pipe 32	4.0 inch PVC Pipe	6'	0.50%	
Pipe 33	4.0 inch PVC Pipe	138'	0.56%	
Pipe 34	4.0 inch PVC Pipe	3'	3.26%	
Pipe 60	4.0 inch PVC Pipe	28'	0.90%	



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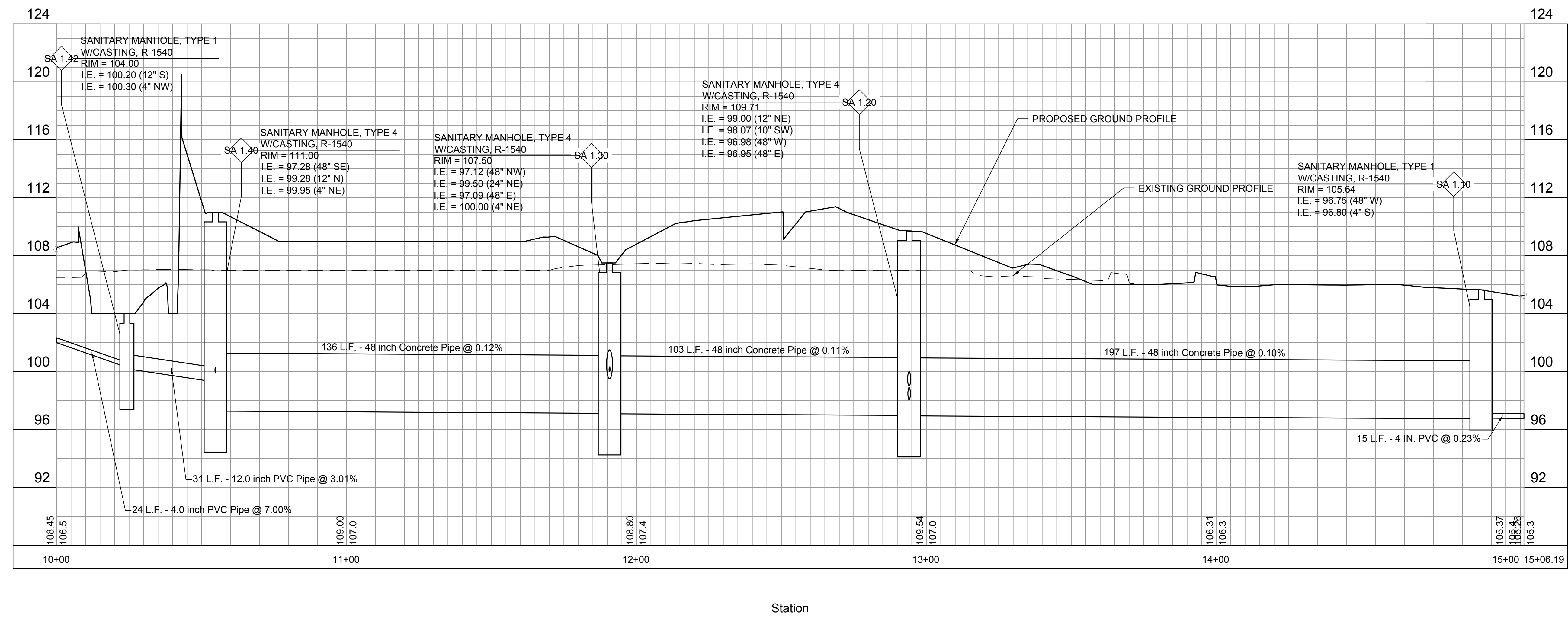
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 SANITARY PIPE TABLE

C2.3

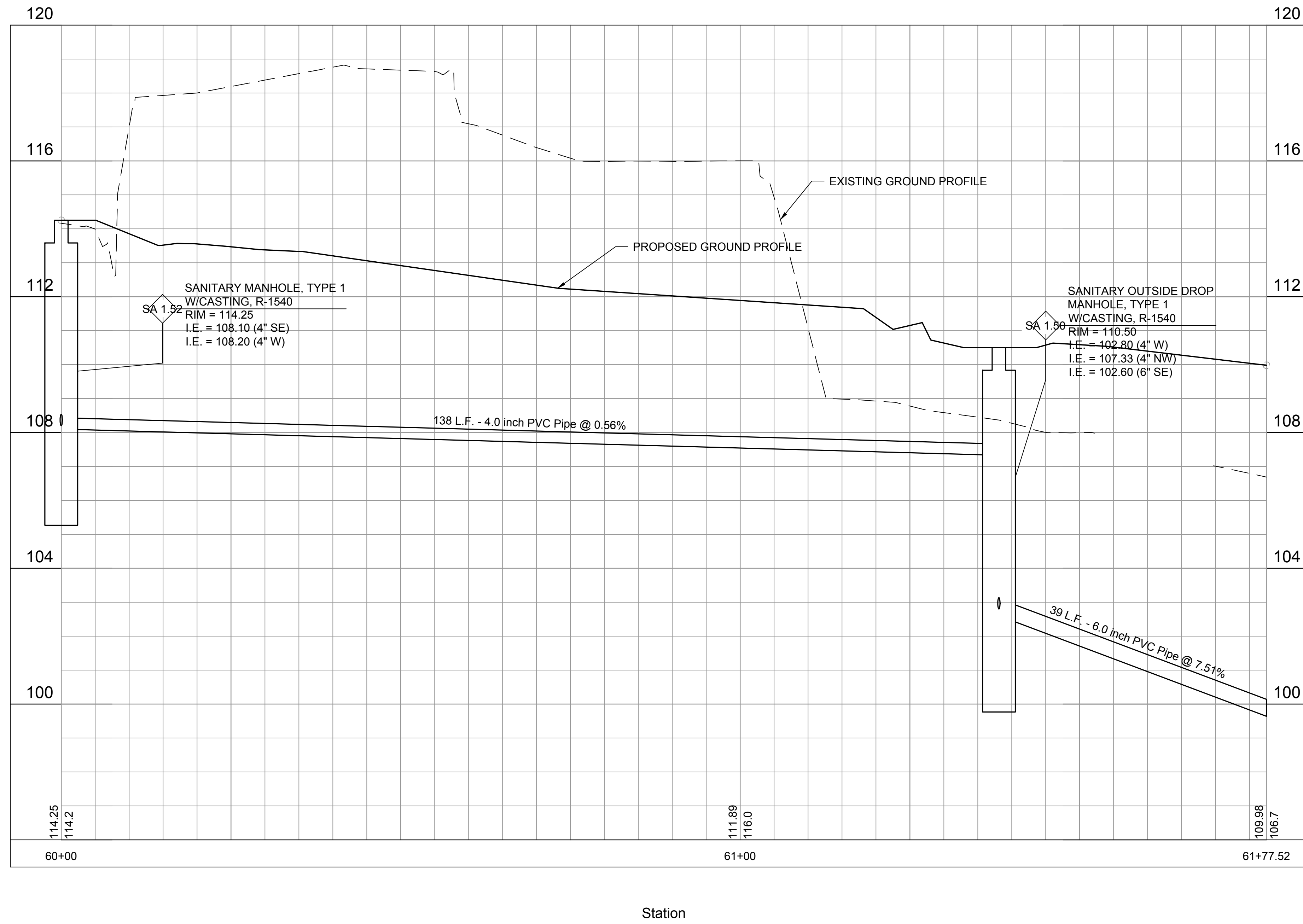


# Mainline Sanitary Profile

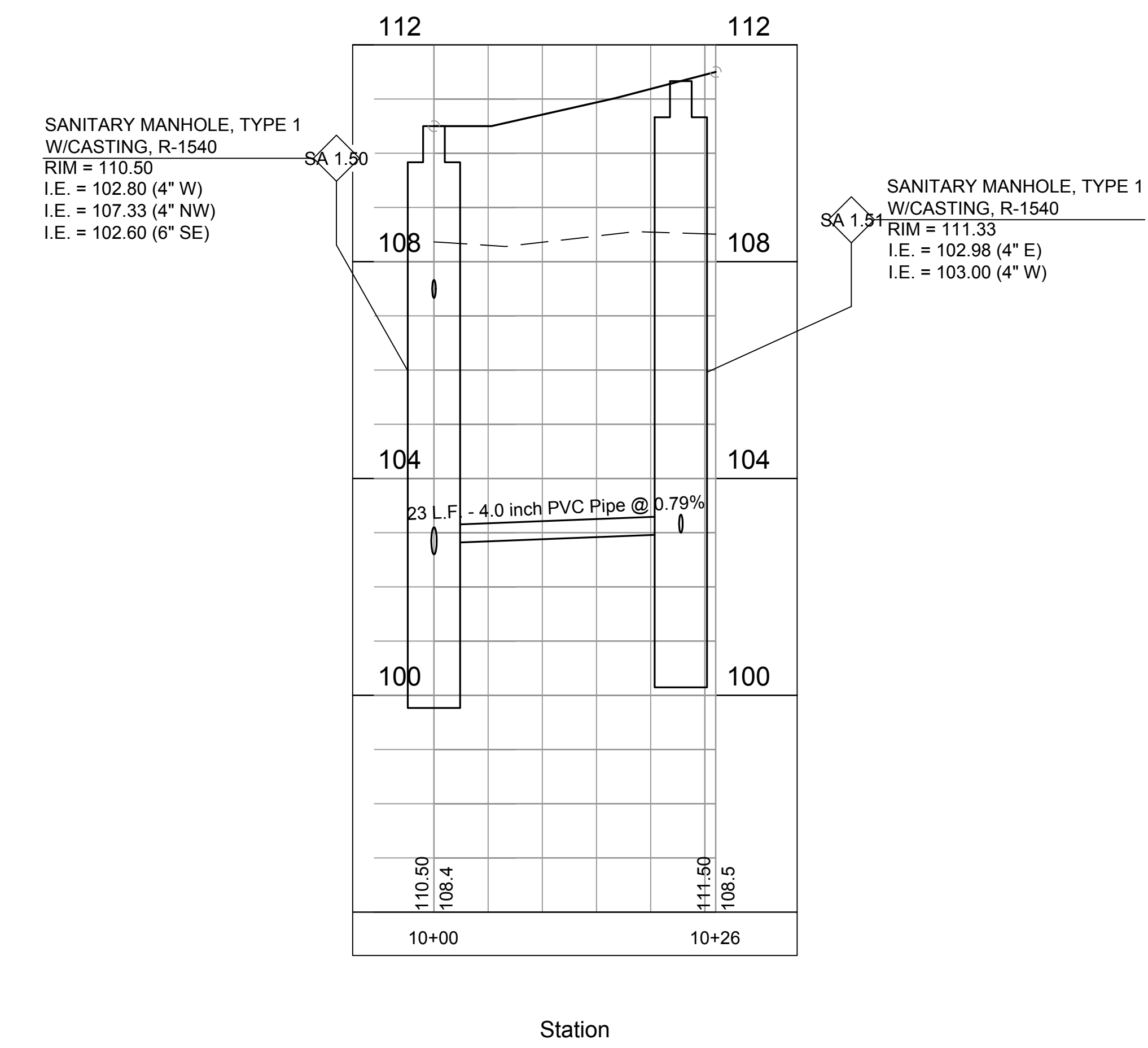




## Bear Building Sanitary Line



## Seal Building Sanitary Line



WDM Architects P.A.  
105 North Washington  
Wichita, KS 67202-2815  
T 316.262.4700  
F 316.262.0002  
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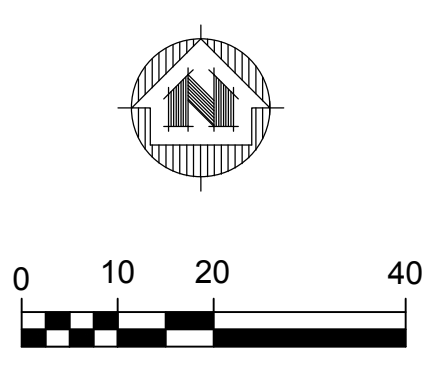
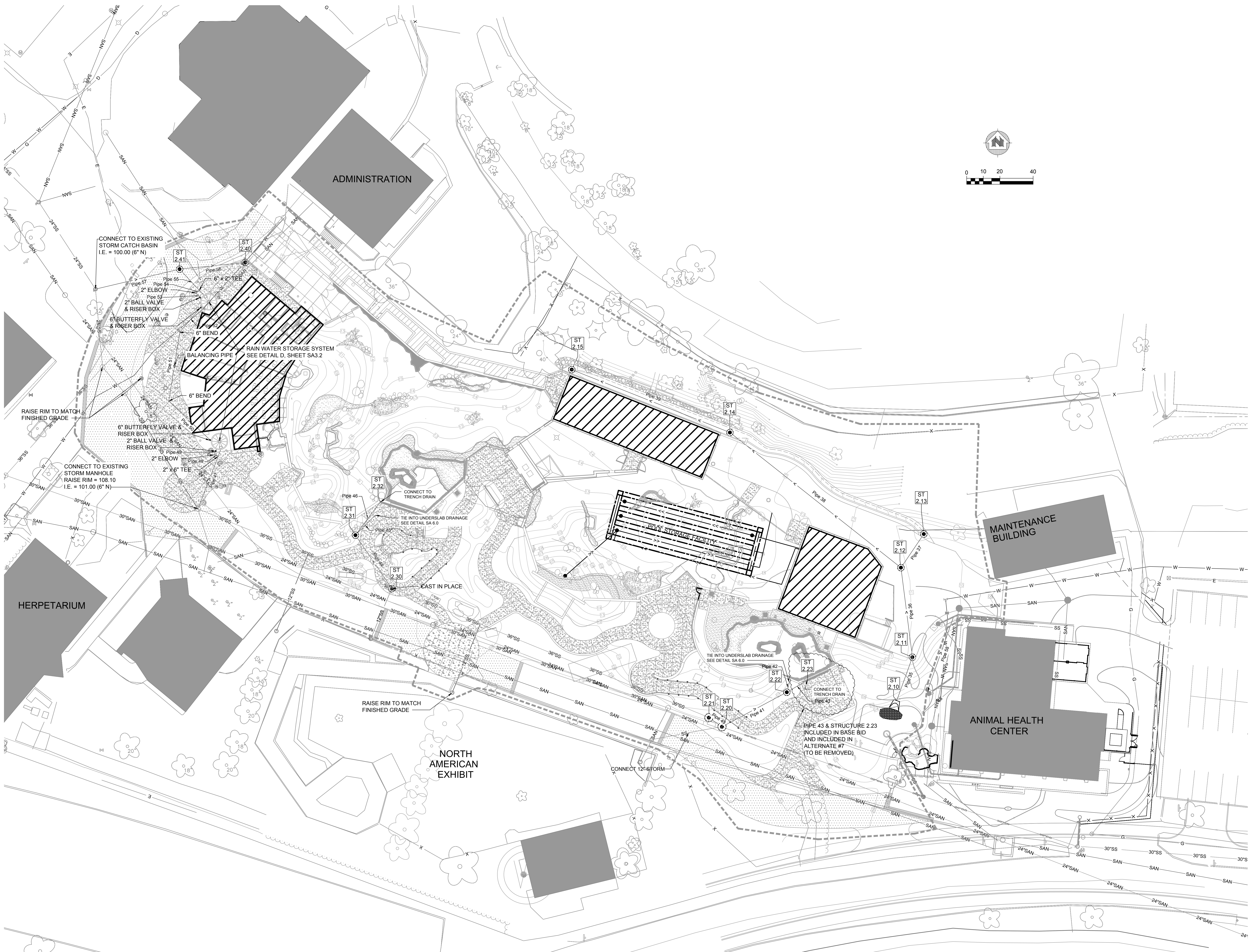
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drawn: KN  
checked: KL  
Sanitary Profile (Bear/Seal)

**C2.5**





WDM Architects P.A.  
105 North Washington  
Wichita, KS 67202-2815  
T 316.262.4700  
F 316.262.0002  
wdmarchitects.com



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checked: KL

STORM WATER

**C2.6**



STRUCTURE TABLE						
STRUCTURE NAME:	NORTHING	EASTING	DETAILS:	PIPES IN:	PIPES OUT	CASTINGS
ST 2.10	476983.67	814779.08	12" FES W/ APRON ENDWALL RIM = 104.00	Pipe 35, 12" INV IN =104.00		
ST 2.11	477009.78	814788.53	TYPE 1 RIM = 110.80 INV IN = 105.00 INV OUT = 105.00	Pipe 36, 12" INV IN =105.00	Pipe 35, 12" INV OUT =105.00	R-1550
ST 2.12	477063.65	814781.62	TYPE 1 RIM = 111.10 INV IN = 108.10 INV IN = 107.00 INV OUT = 106.00	Pipe 38, 12" INV IN =108.10 Pipe 37, 12" INV IN =107.00	Pipe 36, 12" INV OUT =106.00	R-1550
ST 2.13	477083.88	814795.38	24" INVERTED BELL RIM = 110.60 INV OUT = 107.60		Pipe 37, 12" INV OUT =107.60	R-4360-D
ST 2.14	477145.00	814678.70	24" INVERTED BELL RIM = 125.40 INV IN = 122.40 INV OUT = 113.00	Pipe 39, 12" INV IN =122.40	Pipe 38, 12" INV OUT =113.00	R-4360-D
ST 2.15	477182.85	814583.48	24" INVERTED BELL RIM = 126.00 INV OUT = 123.00		Pipe 39, 12" INV OUT =123.00	R-4360-D
ST 2.20	476967.92	814673.92	TYPE 2 RIM = 108.00 INV IN = 100.00 INV IN = 99.24	Pipe 41, 4" INV IN =100.00 Pipe 40, 30" INV IN =99.24		R-1550
ST 2.21	476973.41	814666.01	TYPE 2 RIM = 108.64 INV OUT = 99.55		Pipe 40, 30" INV OUT =99.55	R-1550
ST 2.22	476988.68	814712.92	TYPE 1 RIM = 107.00 INV IN = 102.75 INV IN = 102.00 INV OUT = 101.00	Pipe 42, 4" INV IN =102.75 Pipe 43, 6" INV IN =102.00	Pipe 41, 4" INV OUT =101.00	R-1550
ST 2.23	476996.05	814725.43	6" TRENCH DRAIN RIM = 103.03 INV OUT = 105.25		Pipe 43, 6" INV OUT =105.25	R-4996-A GRATE Q
ST 2.30	477051.06	814475.25	TYPE 1 RIM = 108.31 INV IN = 100.00	Pipe 44, 12" INV IN =100.00		R-1550
ST 2.31	477083.23	814453.29	TYPE 1 RIM = 108.50 INV IN = 103.00 INV OUT = 101.65 INV OUT = 101.75	Pipe 46, 6" INV IN =103.00	Pipe 44, 12" INV OUT =101.65 Pipe 45, 6" INV OUT =101.75	R-1550
ST 2.32	477103.20	814468.27	6" TRENCH DRAIN RIM = 106.84 INV OUT = 106.30		Pipe 46, 6" INV OUT =106.30	R-4996-A GRATE Q
ST 2.40	477247.36	814386.98	TYPE 1 RIM = 108.50 INV OUT = 105.25		Pipe 56, 6" INV OUT =105.25	R-1550
ST 2.41	477243.32	814347.48	TYPE 1 RIM = 108.54 INV IN = 101.00 INV IN = 105.10 INV OUT = 104.00	Pipe 55, 6" INV IN =101.00 Pipe 56, 6" INV IN =105.10	Pipe 57, 6" INV OUT =104.00	R-1550

Pipe Table			
NAME	SIZE & MATERIAL	LENGTH	SLOPE
Pipe 35	12.0 inch PVC Pipe	28'	3.60%
Pipe 36	12.0 inch PVC Pipe	54'	1.84%
Pipe 37	12.0 inch PVC Pipe	25'	2.45%
Pipe 38	12.0 inch PVC Pipe	131'	3.74%
Pipe 39	12.0 inch PVC Pipe	103'	0.59%
Pipe 40	30 IN. RCP	10'	3.22%
Pipe 41	4.0 inch PVC Pipe	44'	2.26%
Pipe 42	4.0 inch PVC Pipe	6'	4.16%
Pipe 43	6.0 inch PVC Pipe	15'	22.39%
Pipe 44	12.0 inch PVC Pipe	44'	3.71%
Pipe 45	6.0 inch PVC Pipe	17'	1.48%
Pipe 46	6.0 inch PVC Pipe	25'	13.22%
Pipe 47	6.0 inch PVC Pipe	38'	12.24%
Pipe 48	4.0 inch PVC Pipe	3'	8.09%
Pipe 49	4.0 inch PVC Pipe	4'	5.80%
Pipe 50	6.0 inch PVC Pipe	35'	0.00%
Pipe 51	6.0 inch PVC Pipe	42'	0.00%
Pipe 52	6.0 inch PVC Pipe	20'	0.00%
Pipe 53	4.0 inch PVC Pipe	5'	14.45%
Pipe 54	4.0 inch PVC Pipe	3'	8.90%
Pipe 55	6.0 inch PVC Pipe	22'	21.71%
Pipe 56	6.0 inch PVC Pipe	40'	0.38%
Pipe 57	6.0 inch PVC Pipe	52'	7.68%
Pipe 58	6.0 inch PVC Pipe	46'	4.43%



we do more



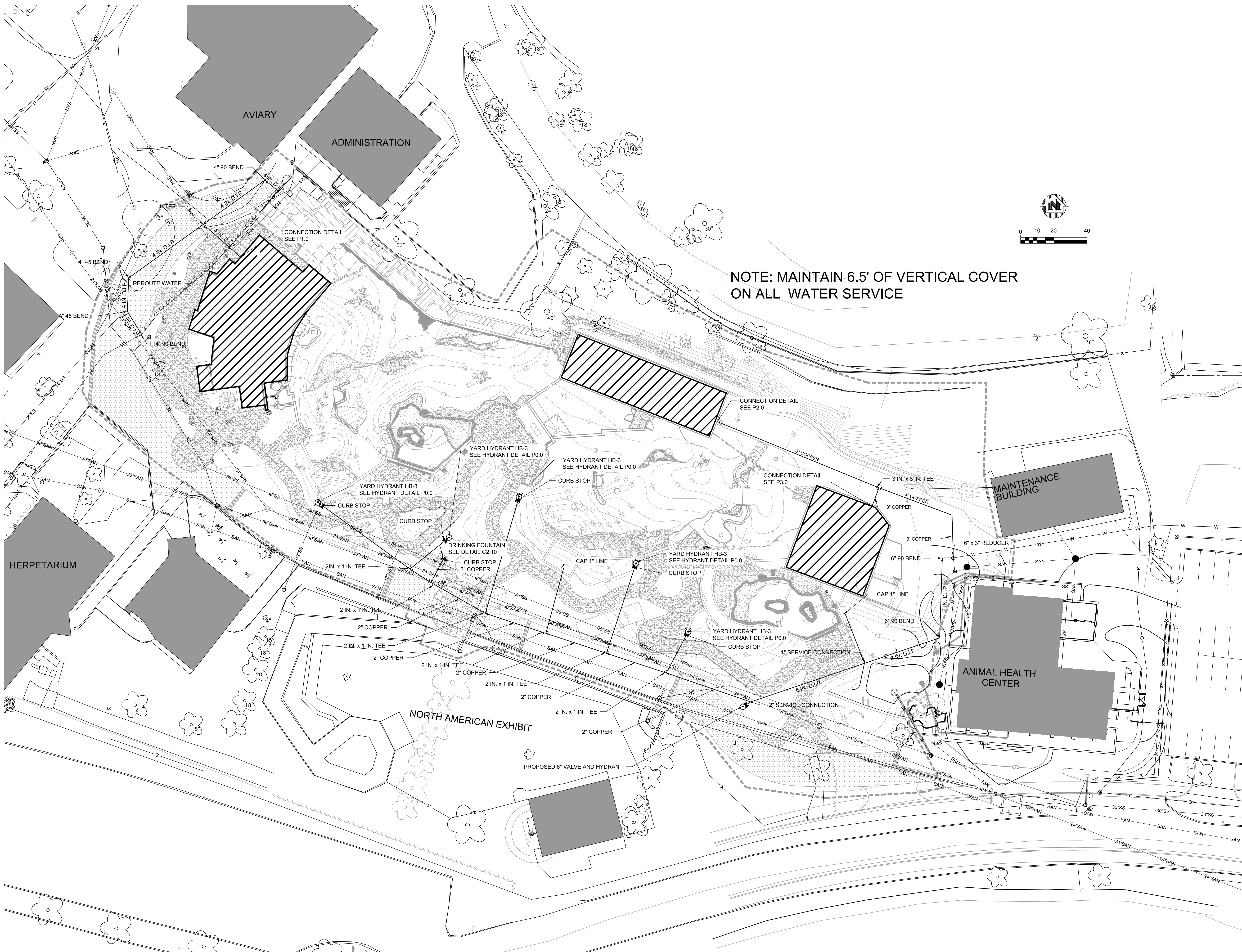
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 checked: KL  
 Storm Water Str. & Pipe Tables

**C2.7**





NOTE: MAINTAIN 6.5' OF VERTICAL COVER ON ALL WATER SERVICE



WDM Architects P.A.  
105 North Washington  
Wichita, KS 67202-2815  
T 316.262.4700  
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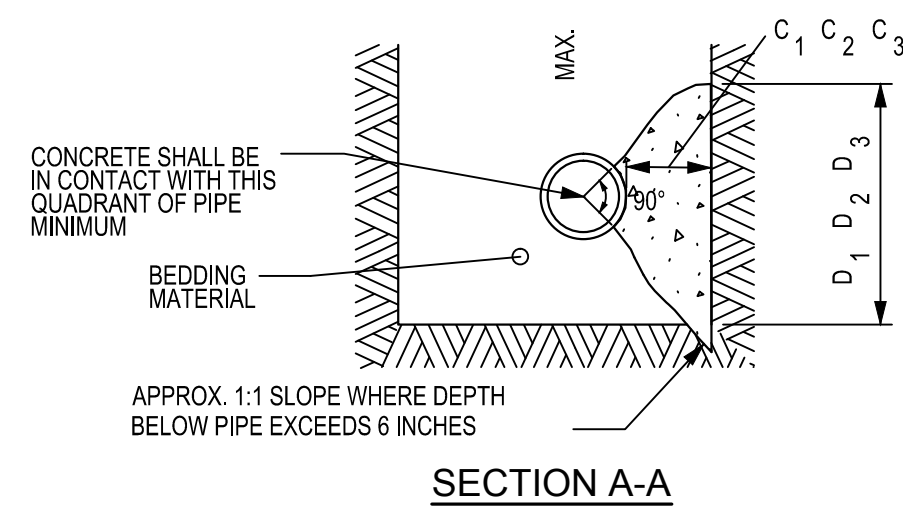
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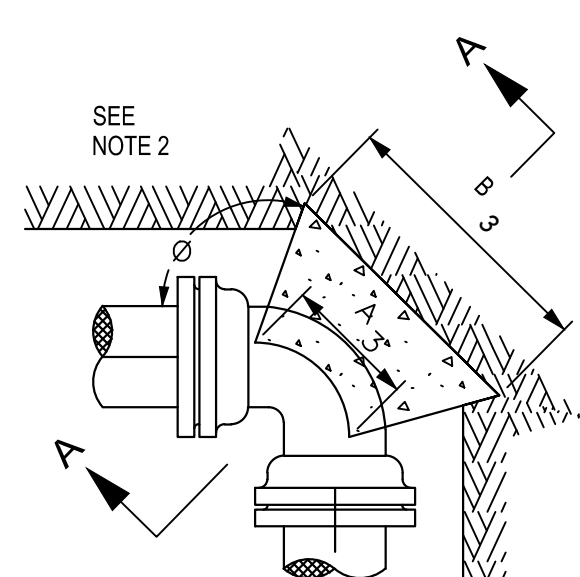
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checked: KL  
WATER

**C2.8**



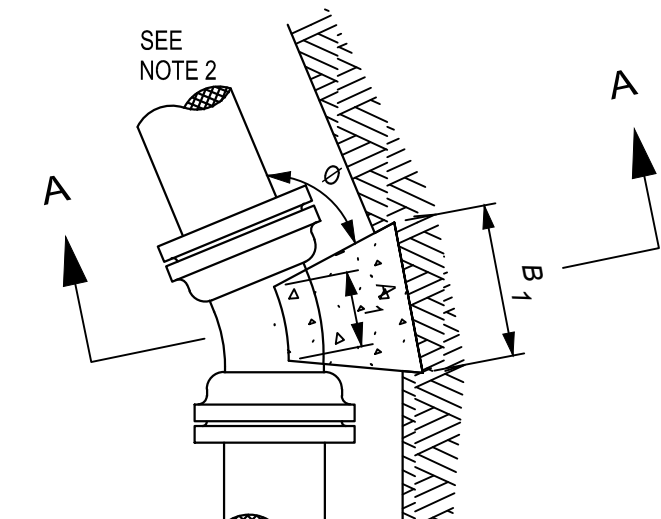


SECTION A-A

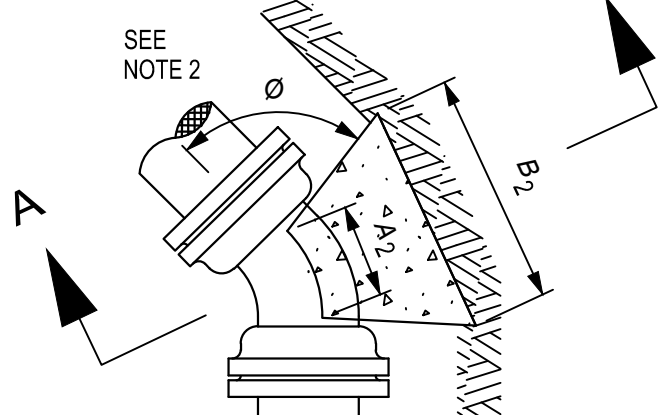


PLAN - 90° BEND

- NOTES:
- DIMENSIONS IN TABLE ARE BASED ON A WATER PRESSURE OF 150 P.S.I. AND AN EARTH RESISTANCE OF 2 TONS PER SQ. FT. INFORM THE ENGINEER IF PRESSURES EXCEEDS 150 P.S.I. OR ON-SITE SOIL DOES NOT MEET THIS CONDITION.
  - DIMENSION C C C SHOULD BE LARGE ENOUGH TO MAKE ANGLE Ø EQUAL TO OR LARGER THAN 45°.
  - DIMENSION C C C SHOULD BE LARGE AS POSSIBLE WITHOUT INTERFERING WITH THE MECHANICAL JOINT.
  - BUTTRESS TO BE PLACED AGAINST FIRM UNDISTURBED SOIL, OR DISTURBED SOIL COMPACTED TO 95% OF MODIFIED PROCTOR DENSITY, ASTM D1557.
  - ALL Poured BUTTRESSED FITTINGS SHALL BE WRAPPED IN POLYETHYLENE.
  - CONCRETE SHALL HAVE A MINIMUM 7-DAY COMPRESSIVE STRENGTH OF 2000 P.S.I.
  - IN ADDITION TO BUTTRESS, ALL JOINTS SURROUNDING BENDS SHALL BE RESTRAINED WITH WEDGE ACTION RESTRAINING GLANDS, RESTRAINED WITH WEDGE ACTION RESTRAINING GLANDS.



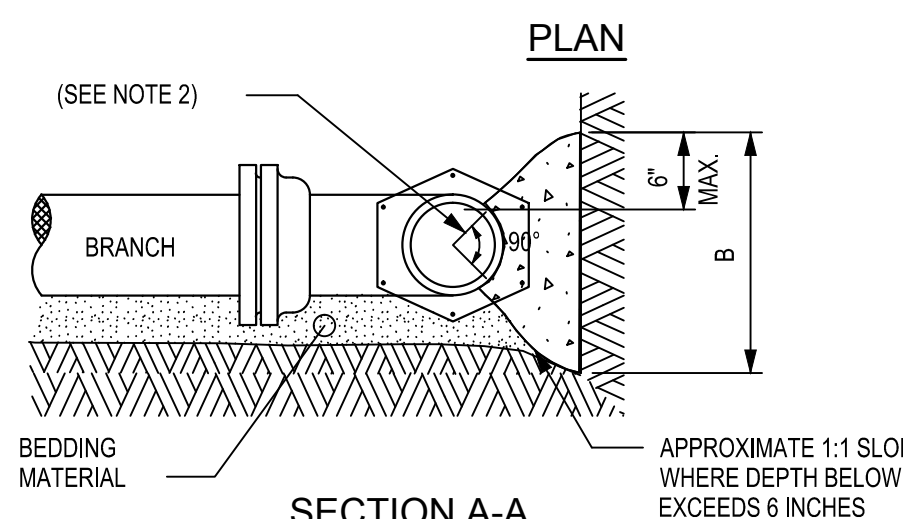
PLAN - 22 1/2° BEND



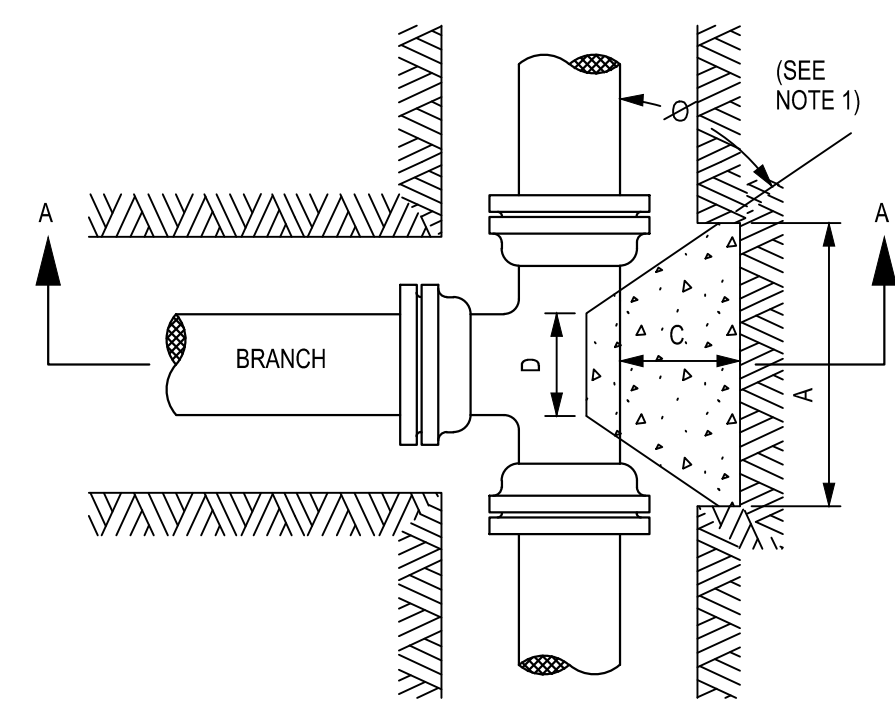
PLAN - 45° BEND

PIPE SIZE	22 1/2° BENDS			45° BENDS		90° BENDS	
	B <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	B <sub>2</sub>	D <sub>2</sub>	B <sub>3</sub>	D <sub>3</sub>
6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-4"	1'-2"
8"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"	
10"	1'-2"	1'-2"	1'-7"	1'-7"	2'-3"	1'-10"	
12"	1'-4"	1'-4"	1'-10"	1'-10"	2'-8"	2'-3"	
16"	1'-10"	1'-8"	2'-6"	2'-4"	3'-10"	2'-10"	
20"	2'-4"	2'-0"	3'-3"	2'-10"	5'-0"	3'-4"	
24"	2'-10"	2'-4"	4'-0"	3'-3"	6'-4"	3'-10"	

BUTTRESS FOR BENDS DETAIL  
SCALE: NONE



SECTION A-A

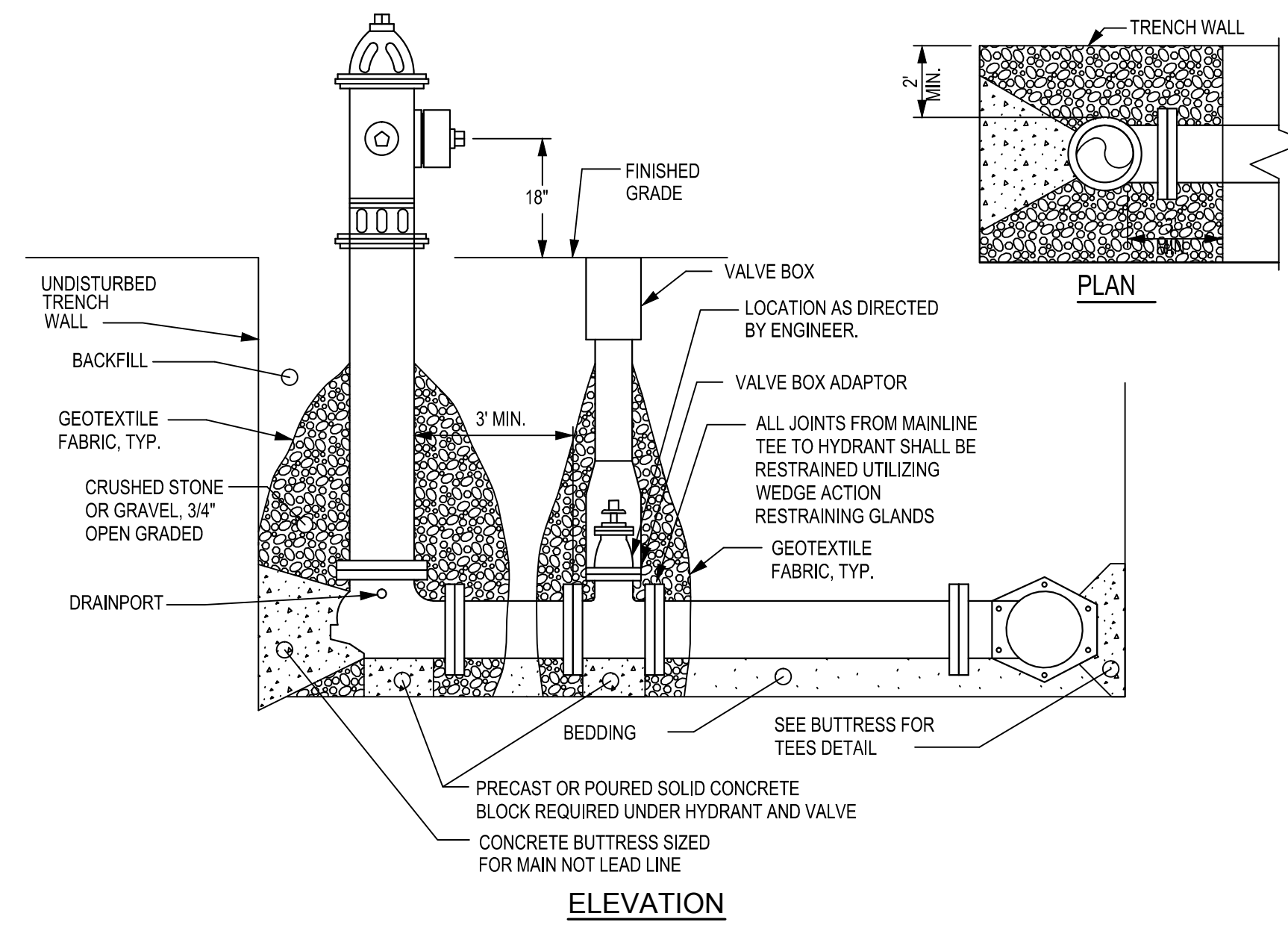


- NOTES:
- DIMENSION 'C' SHOULD BE LARGE ENOUGH TO MAKE ANGLE Ø GREATER THAN OR EQUAL TO 45°.
  - CONCRETE SHOULD BEAR ON THIS QUADRANT OF PIPE AT A MINIMUM.
  - DIMENSION 'B' SHOULD BE AS LARGE AS POSSIBLE BUT CONCRETE SHOULD NOT INTERFERE WITH MECHANICAL JOINTS.
  - BUTTRESS DIMENSIONS ARE BASED ON A SOIL RESISTANCE OF TWO TONS PER SQ. FT. AND A WATER PRESSURE OF 150 P.S.I. INFORM THE ENGINEER IF ON-SITE SOIL DOES NOT MEET THIS CONDITION OR PRESSURES EXCEED 150 P.S.I.
  - BUTTRESS TO BE PLACED AGAINST FIRM UNDISTURBED SOIL, OR DISTURBED SOIL COMPACTED TO 95% OF MODIFIED PROCTOR DENSITY, ASTM D1557.
  - CONCRETE SHALL HAVE A MINIMUM 7-DAY COMPRESSIVE STRENGTH OF 2000 P.S.I.
  - ALL Poured BUTTRESSED FITTINGS SHALL BE WRAPPED IN POLYETHYLENE.
  - IN ADDITION TO BUTTRESSES, ALL JOINTS SURROUNDING TEES SHALL BE RESTRAINED WITH WEDGE ACTION RESTRAINING GLANDS.

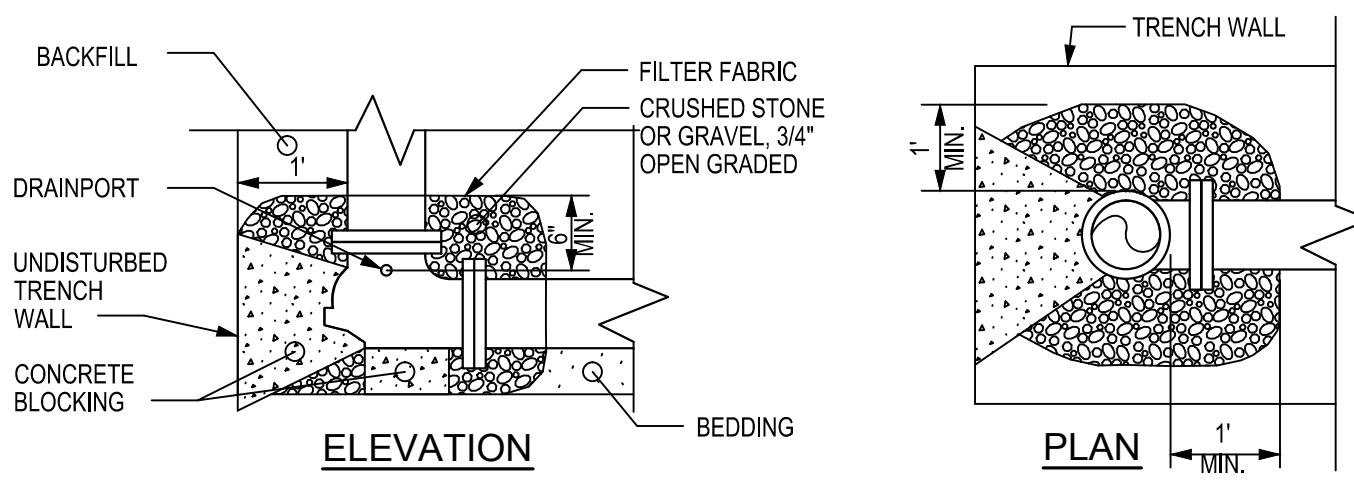
B.D.	BUTTRESS DIMENSIONS			
	A	B	C	D
6"	1'-3"	1'-0"		
8"	1'-6"	1'-4"		
10"	1'-10"	1'-8"		
12"	2'-3"	2'-0"	SEE NOTE NO. 1	SEE NOTE NO. 3
16"	3'-2"	2'-6"		
20"	4'-0"	3'-0"		
24"	5'-3"	3'-4"		

B.D. = BRANCH DIAMETER

BUTTRESS FOR TEES DETAIL  
SCALE: NONE

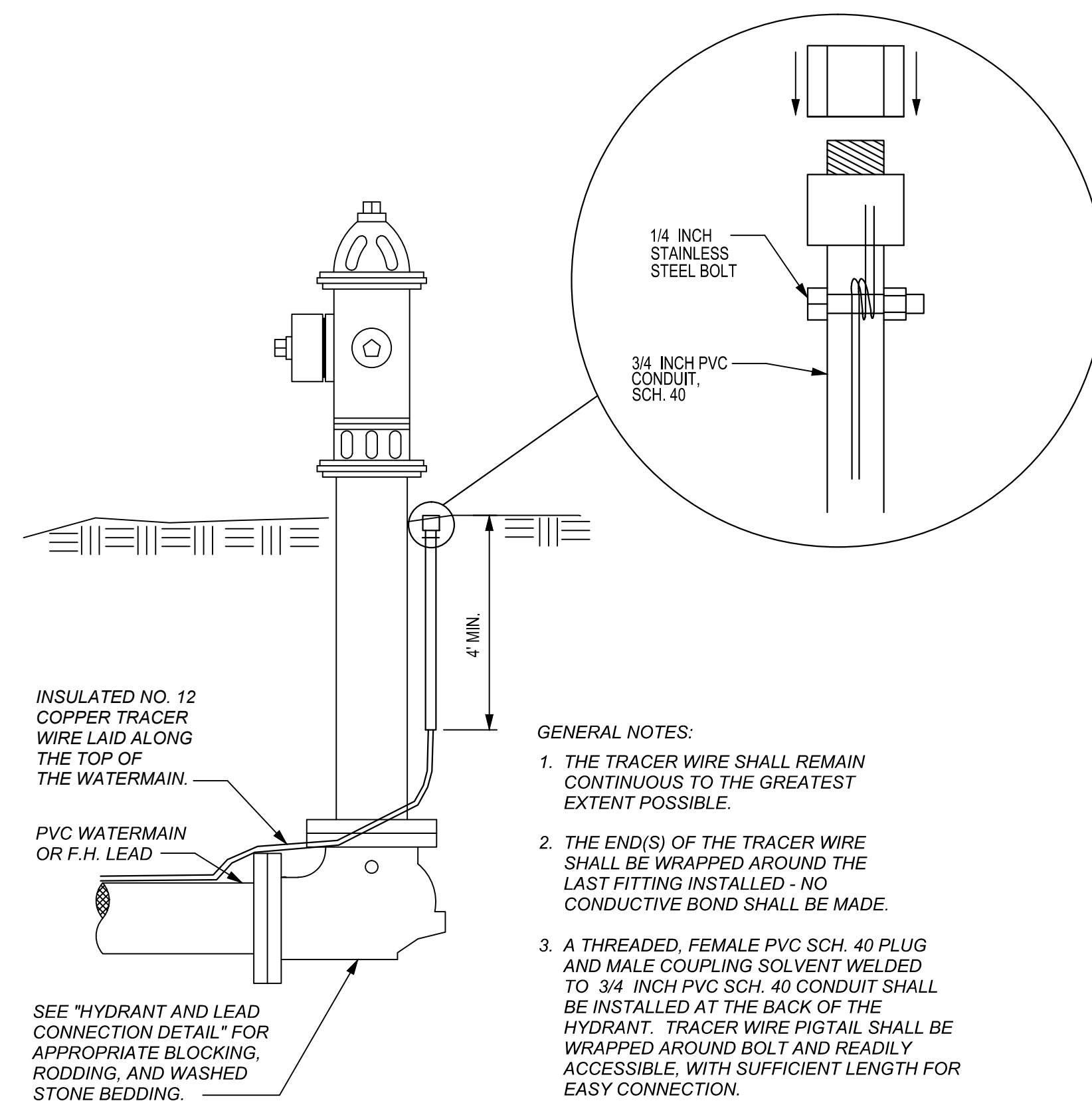


ELEVATION

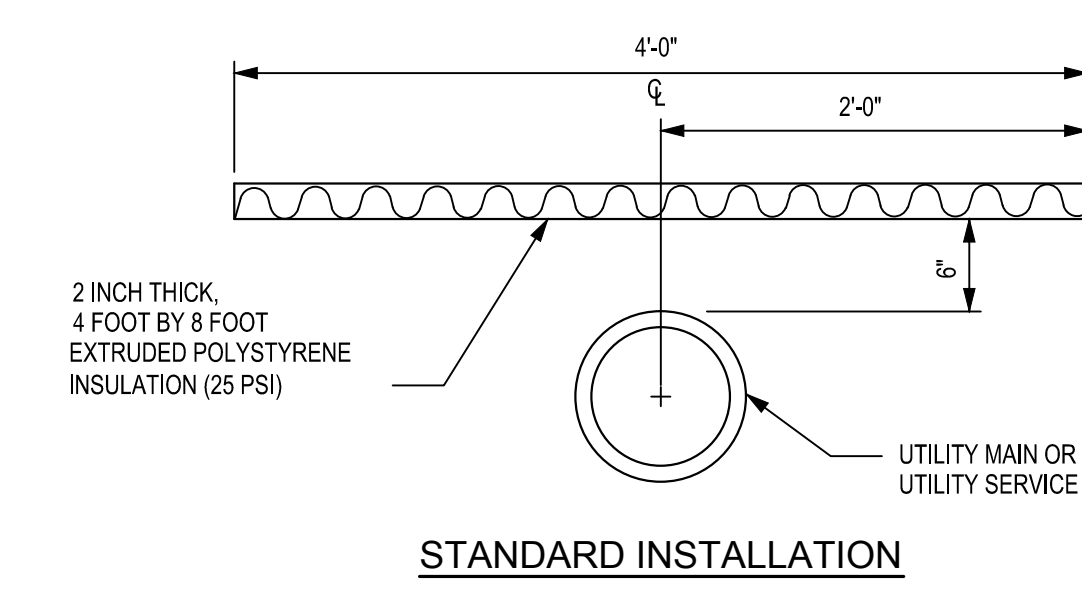


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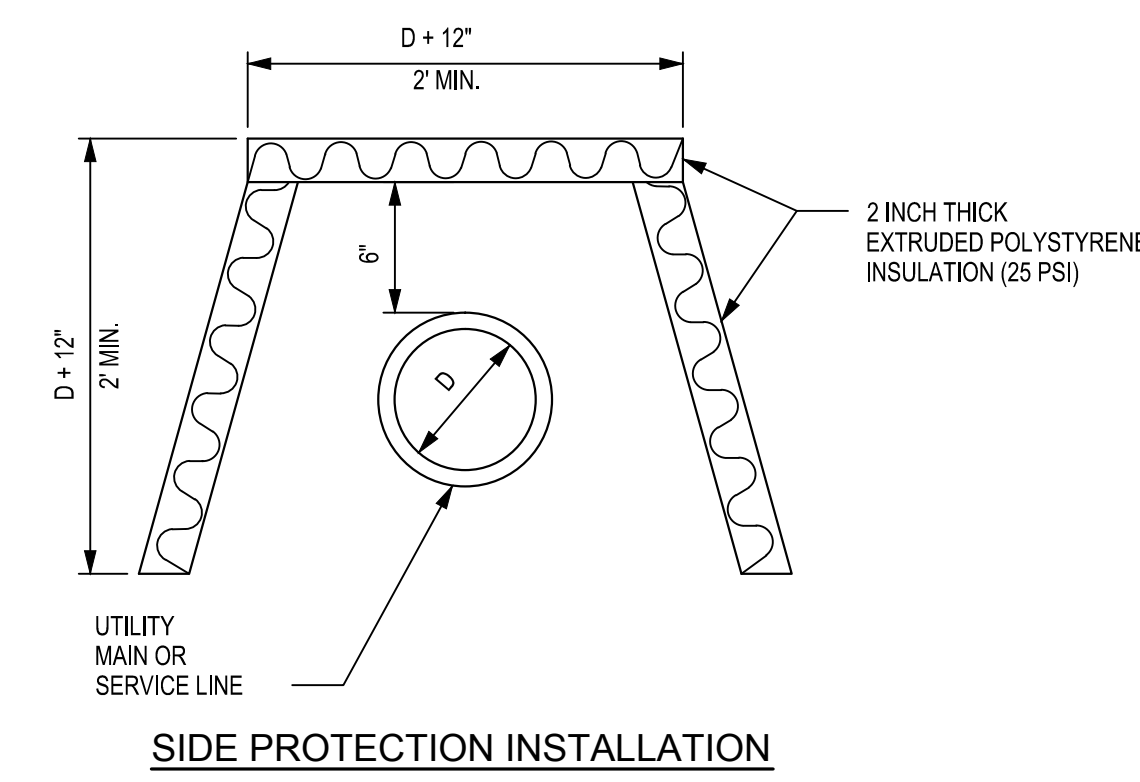
PERVIOUS SOIL SUMP DETAIL  
HYDRANT AND LEAD CONNECTION DETAIL  
SCALE: NONE



TRACER WIRE INSTALLATION FOR PVC WATERMAIN DETAIL  
SCALE: NONE



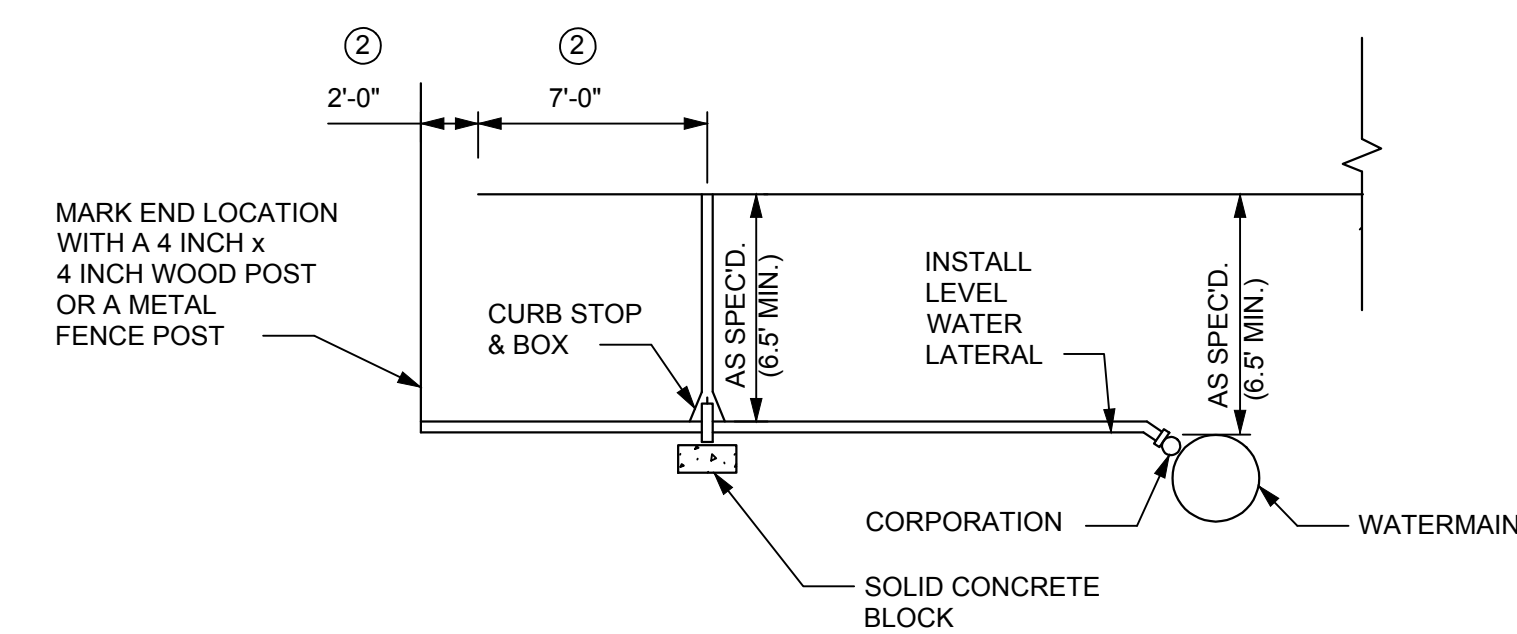
STANDARD INSTALLATION



SIDE PROTECTION INSTALLATION

- GENERAL NOTES:
- THE SIDE PROTECTION INSTALLATION SHALL BE USED WHERE FROST WILL PENETRATE BELOW THE PIPE INVERT.

PIPE INSULATION DETAIL  
SCALE: NONE



- GENERAL NOTES:
- SEE PLANS AND SPECIFICATIONS FOR SIZE AND TYPE OF CURB STOP AND BOX CORPORATION AND SERVICE LINE.
  - COMMUNITY STANDARDS SHALL SUPERSEDE THE DIMENSIONS FROM THE PROPERTY LINE.

WATER SERVICE DETAIL  
SCALE: NONE



ARCTIC ANIMAL EXHIBIT AND CONCESSIONS  
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Henry Vilas Zoo - County of Dane  
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Madison, Wisconsin

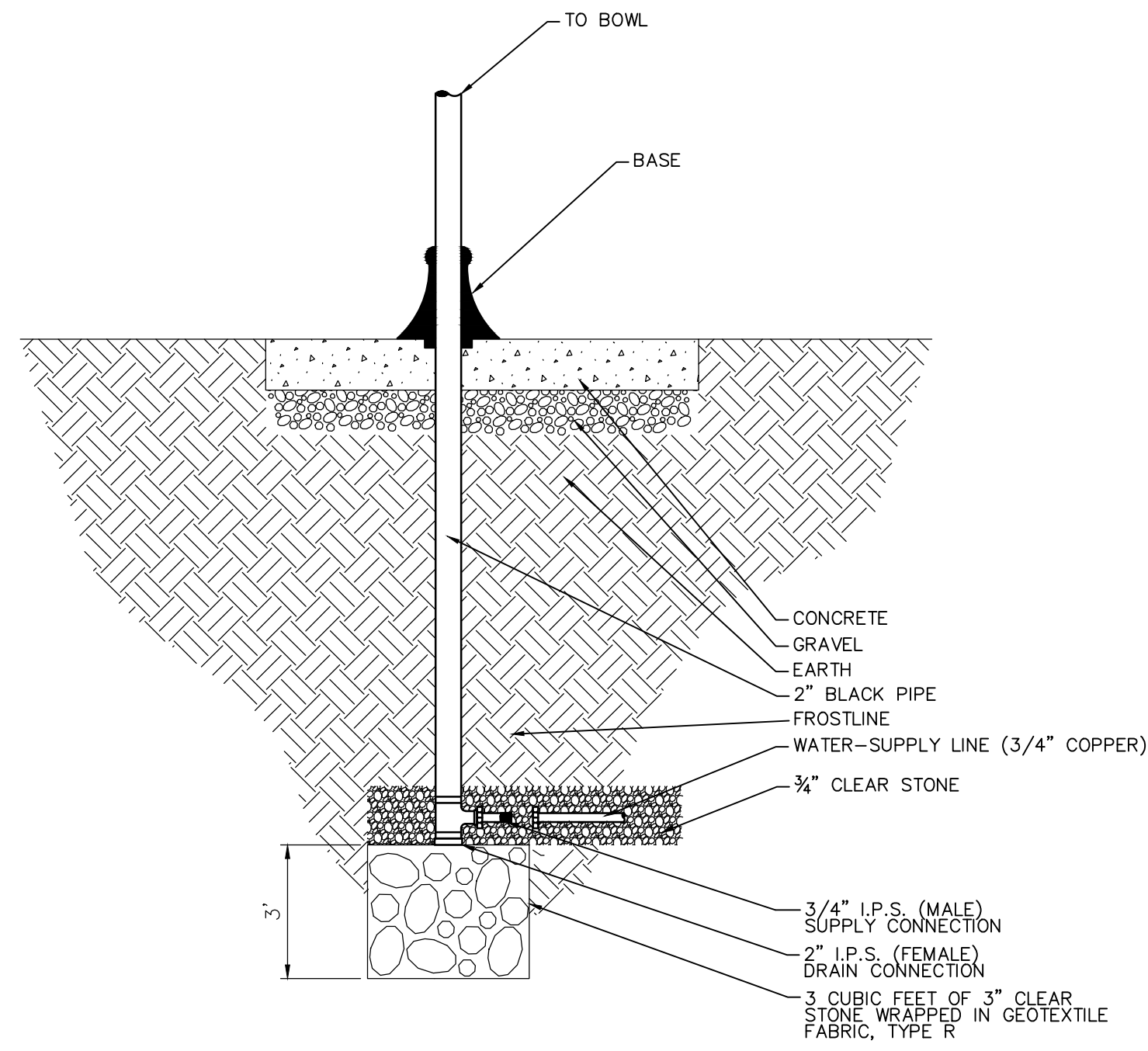
PRINTS ISSUED  
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08.23.2013 - Design Development  
09.23.2013 - 65% CD's  
10.07.2013 - Pricing Set  
10.21.2013 - 95% CD's  
11.13.2013 - Bid Documents

WDM No. 06441000  
drawn: KN  
checked: KL

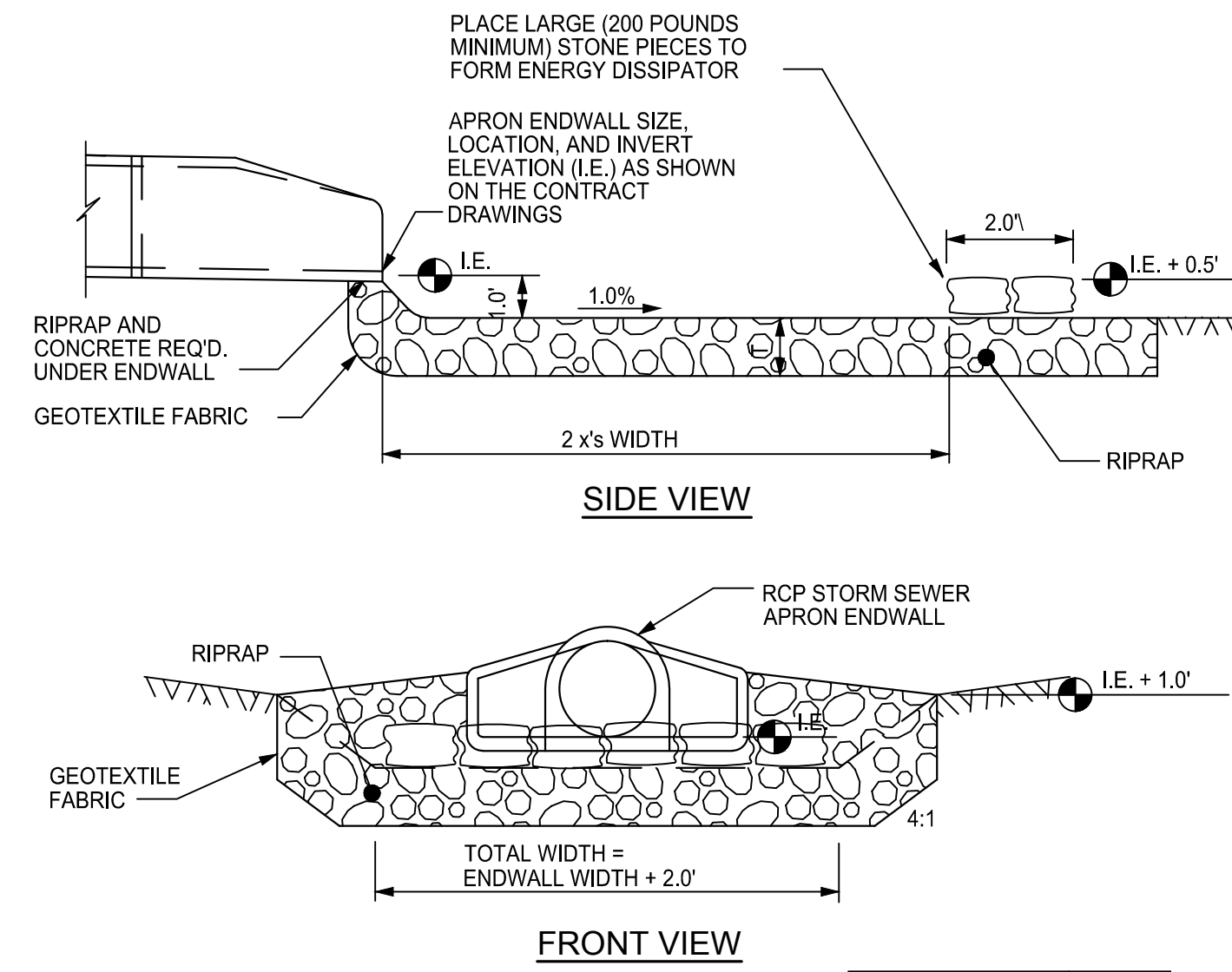
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C2.9



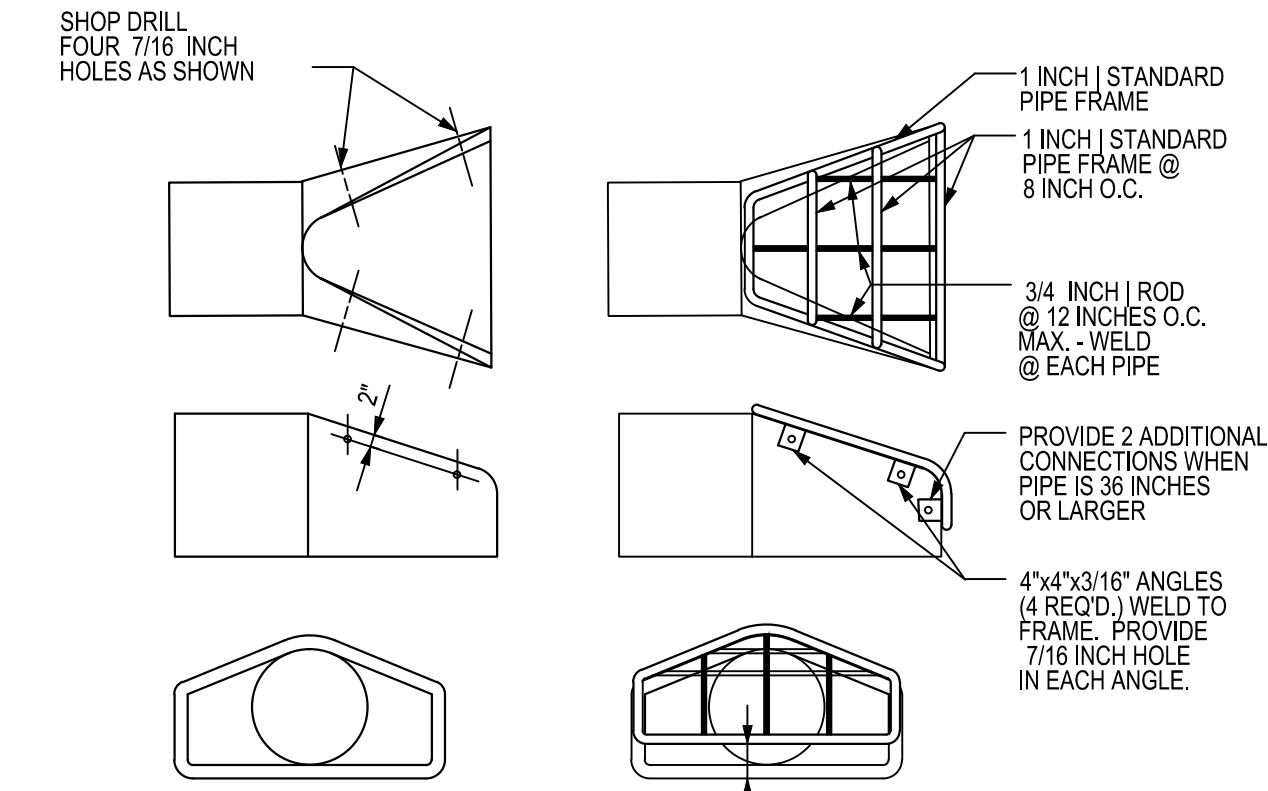


**DRINKING FOUNTAIN CONNECTION DETAIL**  
SCALE: NONE



GENERAL NOTES:  
1. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE SPECIFICATIONS.  
2. THE RIPRAP CLASS AND GEOTEXTILE FABRIC TYPE SHALL BE AS SHOWN ON THE PLANS AND REQUIRED IN THE SPECIFICATIONS.

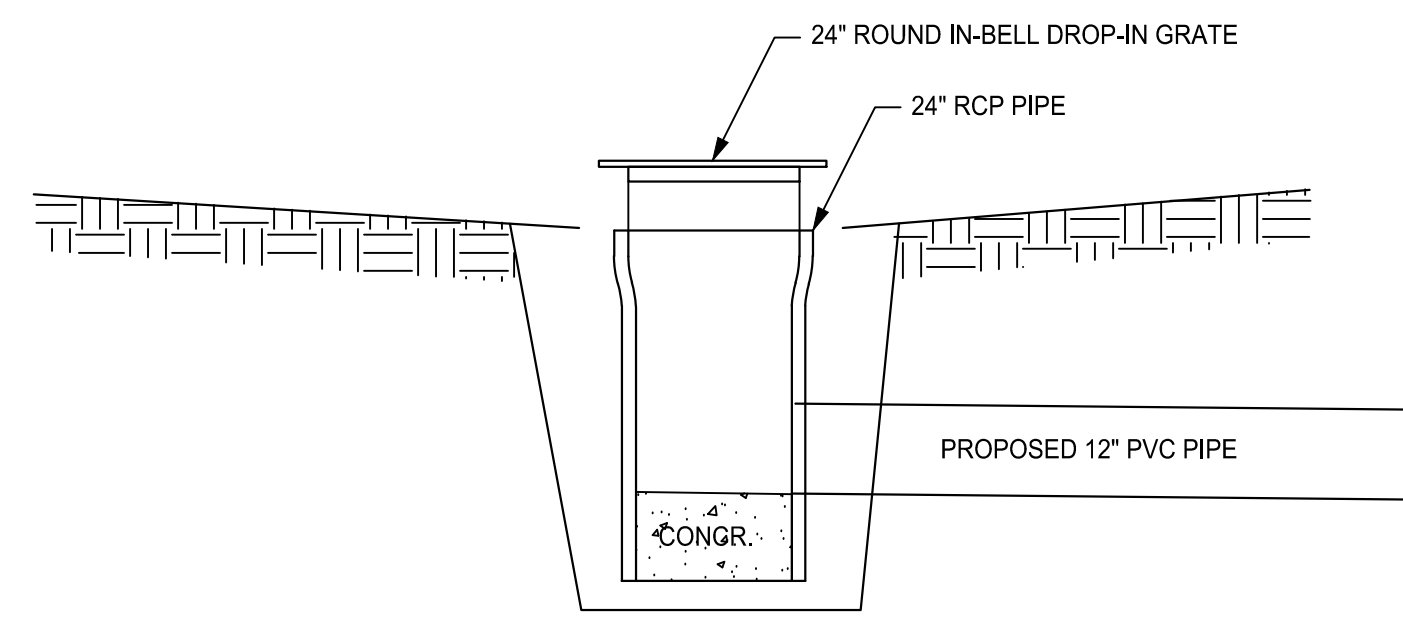
**STORM SEWER OUTFALL DETAIL**  
SCALE: NONE



**REINFORCED CONCRETE APRON ENDWALL PIPE GRATE**

GENERAL NOTES:  
1. THE CONTRACTOR SHALL BOLT THE PIPE GRATE TO THE ENDWALL WITH FOUR 3/8 INCH x 6 INCH STAINLESS STEEL ZINC COATED MACHINE BOLTS WITH NUTS ON INSIDE WALL.  
2. PAINTING SPECIFICATIONS THE PIPE GRATE SHALL RECEIVE THE FOLLOWING PREPARATION AND PAINTING.  
PREPARATION:  
BARE SURFACES BY THOROUGH SCRAPING, WIRE BRUSHING AND CLEANING. APPLY THE THREE COAT SYSTEM LISTED.  
EACH COAT SHALL BE AN OVERALL COAT.  
FIRST COAT: RUST-OLEUM X-60 RED BARE METAL PRIMER OR EQUAL  
SECOND COAT: RUST-OLEUM 880 ZINC CHROMATE PRIMER OR EQUAL  
THIRD COAT: RUST-OLEUM 1282 HIGH GLOSS AND METALIC FINISH OR EQUAL  
ALLOW 24 - 48 HOURS DRYING TIME BETWEEN COATS.

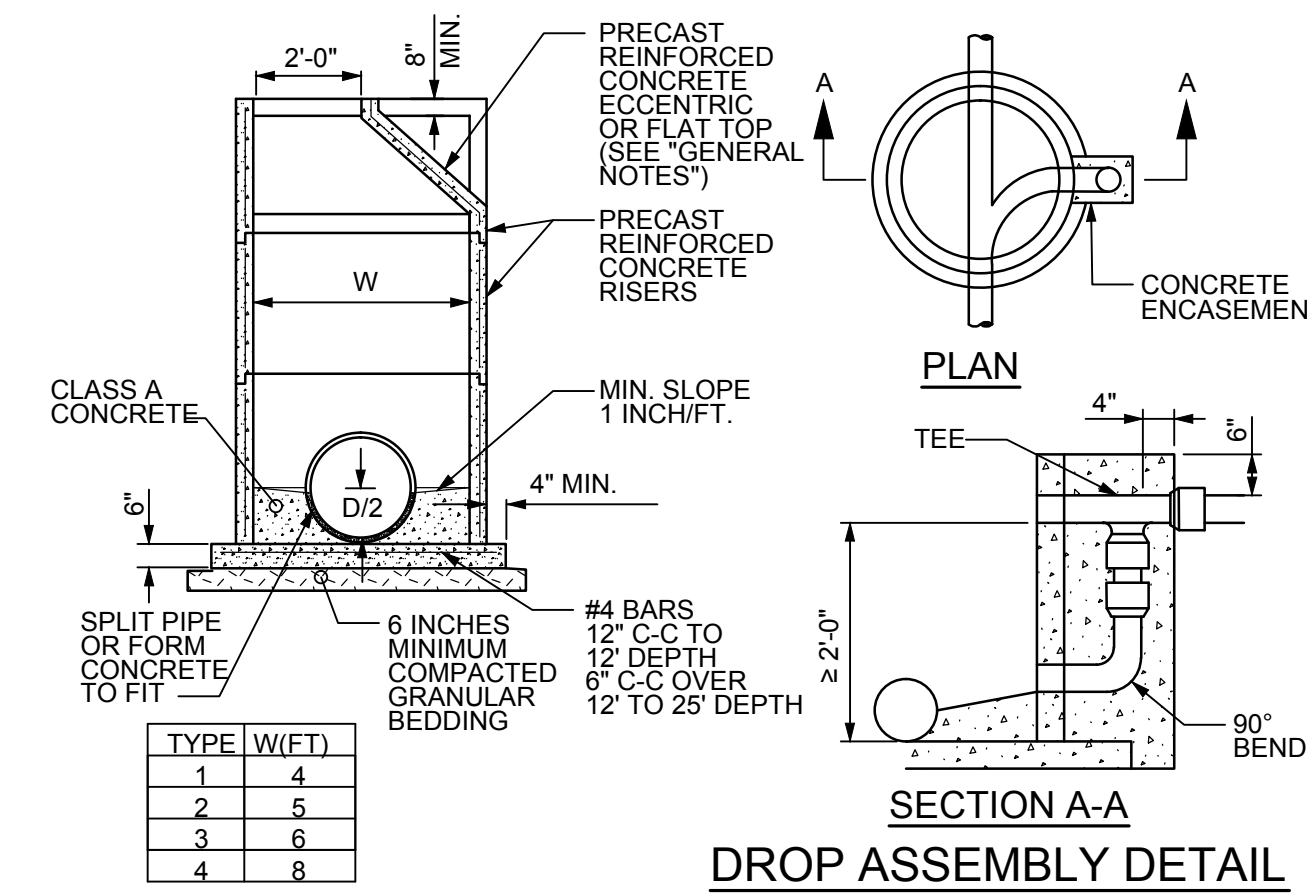
**PIPE GRATE DETAIL**  
SCALE: NONE



CONTRACTOR SHALL CUT 24" RCP PIPE TO PROVIDE MINIMUM 6" CONCRETE BELOW THE INVERT OF THE 12" PVC PIPE.

BACKFILL EXCAVATED HOLE WITH EXISTING MATERIAL. FREE OF LARGESTONES AND DEBRIS.

**IN-BELL DROP-IN GRATE**  
SCALE: NONE



GENERAL NOTES:  
1. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING AND THE APPLICABLE SPECIAL CONDITIONS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.  
2. DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.  
3. PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.  
4. ECCENTRIC CONE TOPS SHALL BE USED ON ALL STRUCTURES 5 FEET OR GREATER IN DEPTH, AND FLAT TOPS SHALL BE USED ONLY ON STRUCTURES LESS THAN 5 FEET IN DEPTH, UNLESS DIRECTED BY THE ENGINEER.  
5. PRECAST REINFORCED CONCRETE RISERS MAY BE PLACED WITH TONGUE UP OR DOWN.  
6. ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.  
7. DROP CONNECTIONS SHALL BE USED WHEN THE PIPE INVERT IS MORE THAN 2 FEET ABOVE THE MANHOLE INVERT. PRECAST STRUCTURE MANWAY CLEAR OPENING SHALL MATCH CASTING - REFER TO STANDARD SPECIFICATION.  
8. DIVISION 33 AND THE APPLICABLE SPECIAL CONDITIONS.  
- OPENING SHALL BE 24" FOR R-1550 CASTINGS  
- OPENING SHALL BE 27" FOR R-1642 CASTINGS

**PRECAST REINFORCED CONCRETE MANHOLE DETAIL**  
SCALE: NONE

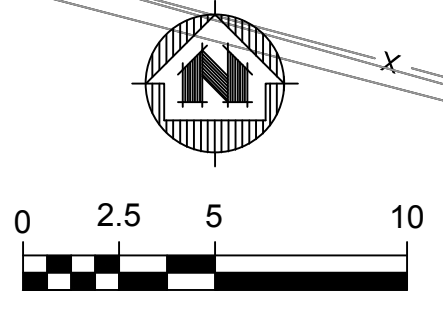


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1919 Alliant Energy Center Way  
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11.13.2013 - Bid Documents

WDM No. draw: KN  
**06441000** checked: KL  
Details - 2





**wdm**  
ARCHITECTS  
WDM Architects P.A.  
105 North Washington  
Wichita, KS 67202-2815  
T 316.262.4700  
F 316.262.0002  
wdmarchitects.com



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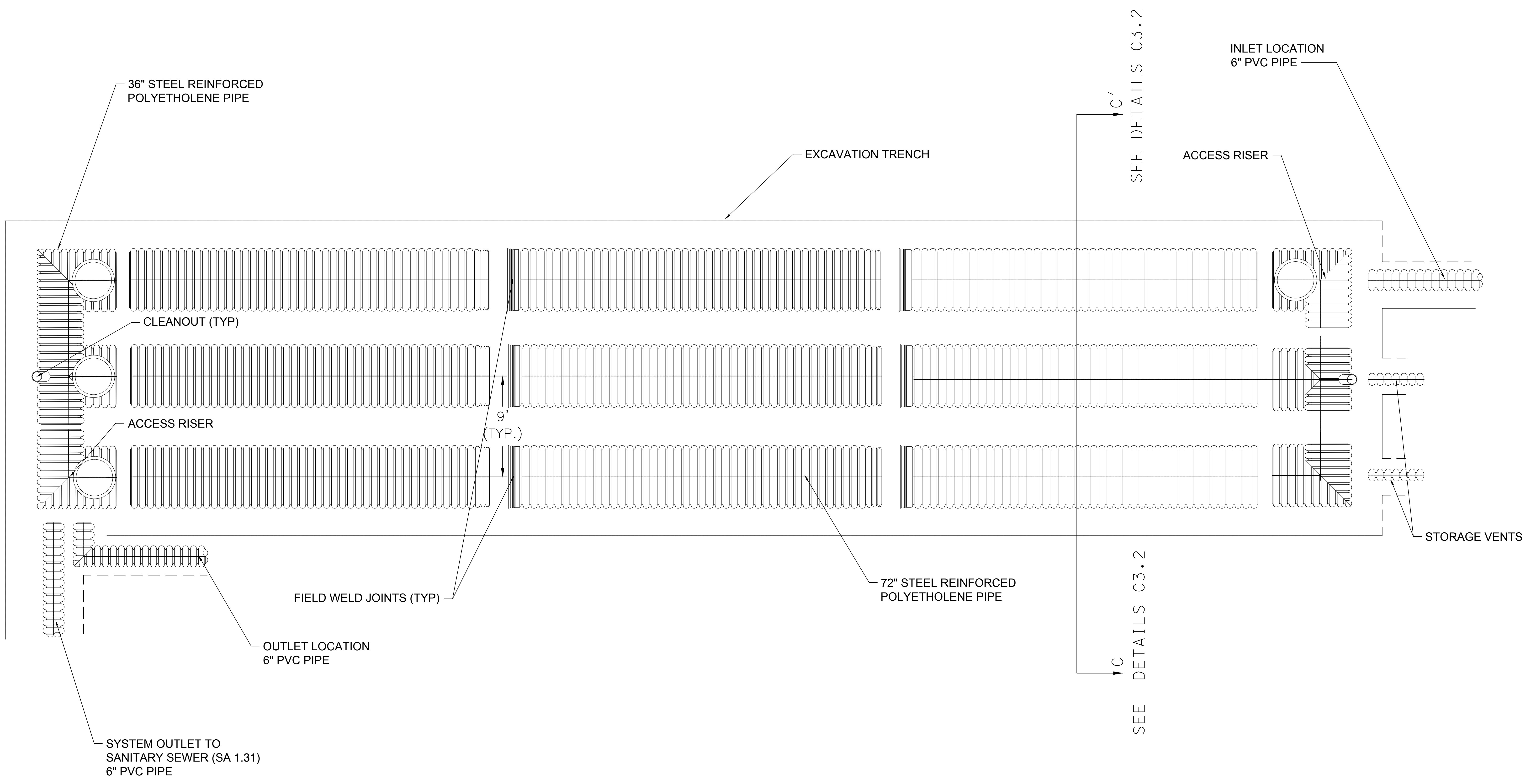
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checked: KL

POOL STORAGE FACILITY

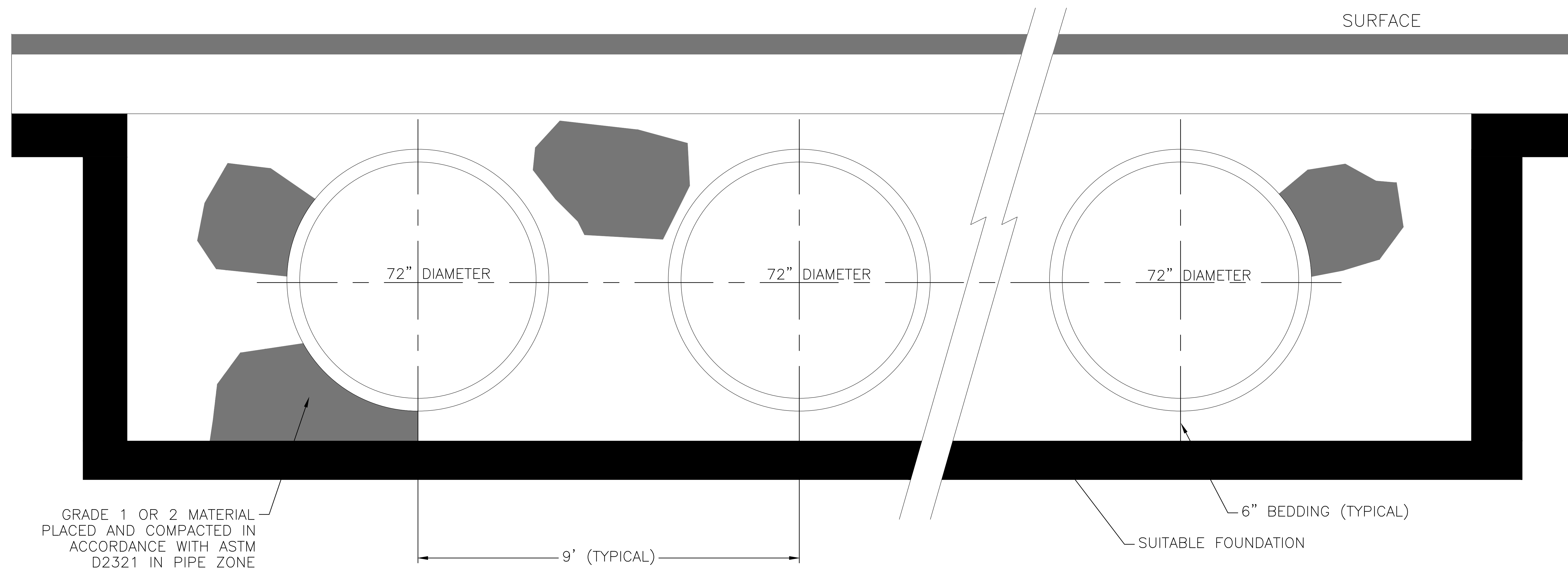
**C3.0**





NOTE: ALL 72" PIPES ARE TO BE AT A .5% SLOPE.





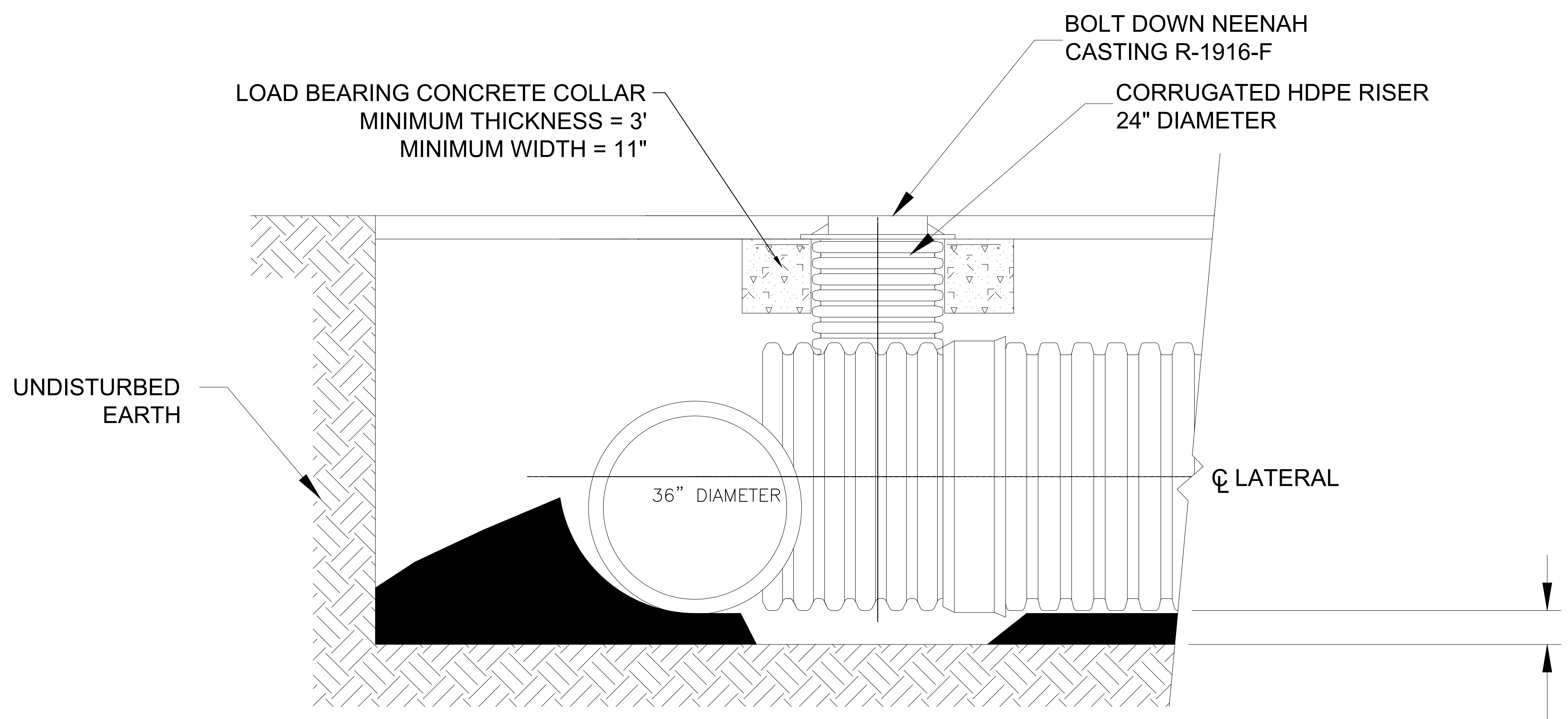
GRADE 1 OR 2 MATERIAL  
PLACED AND COMPACTED IN  
ACCORDANCE WITH ASTM  
D2321 IN PIPE ZONE

9' (TYPICAL)

6" BEDDING (TYPICAL)  
SUITABLE FOUNDATION

**CROSS SECTION**  
NOT TO SCALE

NOTE: PROVIDE A MIN. 2.5' OF GRADE 1 OR 2 MATERIAL  
OVER THE TOP OF PIPES. MATERIAL SUITABLE FOR PAVEMENT  
SUBBASE MAY BE USED ABOVE GRADE 1 OR 2 MATERIAL.  
FILTER FABRIC IS NECESSARY TO SEPARATE BACKFILL MATERIALS.



**RISER DETAIL**  
NOT TO SCALE

0.5' BEDDING (GRADE 1 OR 2 MATERIAL)  
= 6" MIN. FOR 30"-72" HDPE PIPE



WDM Architects P.A.  
105 North Washington  
Wichita, KS 67202-2815  
T 316.262.4700  
F 316.262.0002  
wdmarchitects.com



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drawn: KN  
checked: KL  
STORAGE FACILITY DETAIL - 2

**C3.2**