

# CLINTON ARMORY SITE DRAINAGE IMPROVEMENTS

1200 13TH AVENUE NORTH  
CLINTON, IOWA 52732



VICINITY MAP - CLINTON, IOWA  
NOT TO SCALE

**OWNER:**  
IOWA NATIONAL GUARD  
ATTN: DAVID UMLAND  
CAMP DODGE  
7105 NW 70TH AVENUE  
JOHNSTON, IOWA 50131-1824

**ENGINEER:**  
SHIVE-HATTERY, INC.  
ATTN: BRENT STRAUCH  
4125 WESTOWN PARKWAY, SUITE 100  
WEST DES MOINES, IA 50266  
PHONE: 515-223-8104  
EMAIL: BSTRAUCH@SHIVE-HATTERY.COM

## LEGEND

EXISTING	DESCRIPTION	PROPOSED
---	PROPERTY LINE	---
---	BUILDING SETBACK LINE	---
---	RIGHT-OF-WAY LINE	---
---	LOT LINE	---
---	ELECTRICAL LINE - UNDERGROUND	---
---	STORM SEWER	---
---	SUBDRAIN	---
---	WATER SERVICE	---
---	GAS SERVICE	---
---	SANITARY SERVICE	---
---	SANITARY MANHOLE	---
---	STORM MANHOLE	---
---	STORM INTAKES	---
---	STORM OUTLET	---
---	FIRE HYDRANT	---
---	WATER VALVE	---
---	LIGHT FIXTURE	---
---	ELECTRIC TRANSFORMER	---
---	BOLLARD	---
---	SIGNAGE	---
---	BUILDING	---
---	TREE	---
---	MINOR CONTOUR	---
---	MAJOR CONTOUR	---
---	8" P.C.C. PAVING	---
---	5" P.C.C. SIDEWALK	---

## Sheet List Table

Sheet Number	Sheet Title
C000	COVER SHEET
C001	GENERAL NOTES
CD01	EXISTING CONDITIONS AND DEMOLITION PLAN
C101	SITE AND UTILITY PLAN
C201	GRADING PLAN
C501	CONSTRUCTION DETAILS
C502	CONSTRUCTION DETAILS

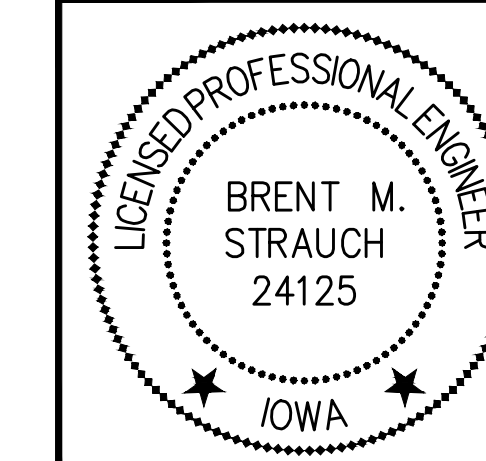
## CONTROL POINTS

NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP50	694786.991	2535150.103	708.847	MAG
CP5	694881.738	2535188.541	706.108	MAG
CP7	694989.949	2535022.937	704.328	MAG
CP1	694391.759	2535146.412	708.912	IR
CP200	694783.955	2535298.049	707.743	GPS
CP3	694463.957	2535282.522	707.662	MAG
CP4	694752.636	2535012.685	708.064	

COORDINATE SYSTEM: IOWA STATE PLANE - SOUTH

CONSTRUCTION NOT SPECIFICALLY DETAILED OR SPECIFIED WITHIN THE PLANS OR PROJECT SPECIFICATIONS SHALL CONFORM TO THE MOST RECENT EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS).

## CIVIL ENGINEER



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed or typed name: BRENT M. STRAUCH  
License Number: 24125  
My License Renewal Date is: DECEMBER 31, 2024  
PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL:  
ALL 'C' SHEETS



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**GENERAL NOTES**

- THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS PLOTTED ON THIS DRAWING ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC. AND NOT SHOWN ON THIS DRAWING. THE VERIFICATION OF EXISTENCE OF, AND THE DETERMINATION OF THE EXACT LOCATION OF, UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR(S).
- NOTIFY UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN CONSTRUCTION LIMITS OF THE SCHEDULE PRIOR TO EACH STAGE OF CONSTRUCTION.
- IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL 1-800-292-8989, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS. THE OWNER WILL LOCATE ALL GUARD OWNED UTILITIES VIA THEIR OWN LOCATOR. THAT PROCESS IS ACTIVATED BY THE ONE CALL SYSTEM.
- THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
- NO WORK SHALL BE PERFORMED BEYOND THE PROJECT LIMITS WITHOUT PRIOR AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE.
- PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
- MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION.
- SITE CLEAN-UP SHALL BE PERFORMED AT THE END OF THE DAY AND PRIOR TO A RAIN EVENT. SIDEWALKS, PARKING LOTS, ROADWAYS, ETC. SHALL BE KEPT CLEAN AT ALL TIMES.
- ALL OPEN EXCAVATIONS SHALL BE PROTECTED.
- REPLACE ANY PROPERTY MONUMENTS REMOVED OR DESTROYED BY CONSTRUCTION. MONUMENTS SHALL BE SET BY A LAND SURVEYOR REGISTERED TO PRACTICE IN THE STATE OF IOWA.
- CONTROL DUST SPREADING FROM ALL WORK AND STAGING AREAS.
- ANY WORK REQUIRED TO COMPLETE THE SCOPE OF THIS PROJECT BUT NOT SPECIFICALLY CALLED OUT, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THE COMPLETION OF THIS WORK.
- REPAIR OR REPLACE EXISTING FACILITIES (CURBS, PAVEMENT, PAVEMENT MARKINGS, UTILITIES, ETC.) TO REMAIN, AT NO ADDITIONAL EXPENSE TO THE OWNER.
- WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. WORK DONE CONTRARY TO THE INSTRUCTIONS OF THE OWNER'S REPRESENTATIVE, WORK DONE BEYOND THE LINES SHOWN ON THE PLANS OR ANY EXTRA WORK DONE WITHOUT AUTHORITY WILL NOT BE PAID FOR.
- ALL SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING.
- NOT ALL DIMENSIONS REQUIRED TO CONSTRUCT IMPROVEMENTS ARE SHOWN ON THE DRAWINGS.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION TO MEET REQUIREMENTS OF ALL REGULATORY AGENCIES.
- CONTRACTOR TO COORDINATE ANY GRADE ADJUSTMENTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK.
- NO PONDING OF WATER WILL BE ACCEPTED ADJACENT TO OR ON ANY NEW PAVEMENT AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY ANY AREAS OF EXISTING OR PROPOSED PAVEMENTS THAT HAVE POTENTIAL TO POND WATER AND MAKE ANY ADJUSTMENTS NECESSARY TO ENSURE THAT WATER WILL POSITIVELY DRAIN ACROSS THE PAVING OR OVERLAY.
- STAGING LOCATION FOR CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER.
- CONTRACTOR RESPONSIBLE FOR COORDINATING AND MINIMIZING DISTURBANCES THROUGHOUT CONSTRUCTION TO ACCOMMODATE EXISTING TRAFFIC FLOW. COORDINATE STAGING AND SCHEDULE OF IMPROVEMENTS WITH THE OWNER'S REPRESENTATIVE. OWNERS RESERVES THE RIGHT TO LIMIT CONSTRUCTION WORK AREA AS NEEDED TO FACILITATE OPERATIONS.
- REMOVAL AND REPLACEMENT OF PAVEMENT SHALL BE DONE ON FULL OR HALF PANELS. REMOVE TO THE NEAREST JOINT UNLESS OTHERWISE NOTED IN PLANS. AREAS TO BE REMOVED SHALL BE VERIFIED IN THE FIELD BY THE OWNER'S REPRESENTATIVE.
- ALL DISTURBED AREAS SHALL BE RESTORED WITH IOWA SUDAS TYPE 1 SEEDING, INCLUDING ROW.
- ALL STAKING SHALL BE DONE UNDER THE DIRECTION OF A LAND SURVEYOR LICENSED IN THE STATE OF IOWA, INCLUDING PEDESTRIAN FACILITIES. ALL STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONSTRUCTION OPERATIONS SHALL PROTECT STORM SEWERS AND DRAINAGE WAYS FROM ALLOWING CONCRETE SLURRY FROM CONCRETE OPERATIONS TO DISCHARGE OFFSITE.

**GRADING AND EROSION CONTROL NOTES**

- BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
- CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL.
- ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
- SUFFICIENT OIL AND GREASE ABSORBING MATERIALS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
- DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
- RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE US.
- DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE SEEDED IMMEDIATELY. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY STOPPED AND SHALL NOT RESUME WITHIN 14 CALENDAR DAYS SHALL BE TEMPORARILY STABILIZED.
- ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
- CONTRACTOR IS RESPONSIBLE FOR REMOVING SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
- SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE SEDIMENT CONTROL MEASURES (SILT FENCES, WATTLES, INLET PROTECTION, ETC.) TO PREVENT EROSION.
- ALL STORM SEWER INTAKES THAT RECEIVE STORMWATER RUNOFF FROM DISTURBED AREAS SHALL BE PROVIDED WITH A FILTER SACK. SEE DETAIL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, INSPECTIONS AND REINSTALLATION OF EROSION AND SEDIMENTATION CONTROL MEASURES. CONTRACTOR SHALL MEET ALL REQUIREMENTS OF THE IOWA DNR ASSOCIATED WITH THE GENERAL PERMIT #2.

**GENERAL UTILITY NOTES**

- ALL UTILITY WORK, PUBLIC OR PRIVATE, SHALL BE DONE IN ACCORDANCE WITH SUDAS STANDARD SPECIFICATIONS.
- ALL SEWERS AND DRAINS SHALL FOLLOW DIVISION 4 SUDAS SPECIFICATION SECTIONS.
- ALL PROPOSED CONNECTIONS TO EXISTING UTILITY STRUCTURES OR PIPING SHALL BE IN ACCORDANCE WITH THE APPLICABLE GOVERNING AUTHORITY REQUIREMENTS AND SPECIFICATIONS.
- THE CONTRACTOR WILL MAINTAIN A RECORD DRAWING SET WITH WITNESS DIMENSIONS TO ALL CONNECTIONS. THESE DRAWINGS WILL BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL STORM FLOW ONSITE UNTIL NEW SYSTEM IS INSTALLED.
- ALL STORM BENDS AND CONNECTIONS SHALL BE MANUFACTURED CONNECTIONS.
- CONTACT FIRE DEPARTMENT OF ANY CHANGES THAT AFFECT FIRE/EMERGENCY.

**TRENCH, EXCAVATION, AND BACKFILL NOTES**

- TRENCH, EXCAVATION AND BACKFILL SHALL FOLLOW DIVISION 3 SUDAS SPECIFICATION SECTIONS.
- THE CONTRACTOR SHALL MAKE PROVISIONS TO HANDLE WATER ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER'S REPRESENTATIVE OF THE PROPOSED METHOD OF DEWATERING.

**SANITARY SEWER NOTES**

- ALL SANITARY SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES IN THE PLANS AND THE STANDARDS, SPECIFICATIONS, CODES AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITIES. IN CASE OF CONFLICT, THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.
- ALL SANITARY SEWER PIPE AND STRUCTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SUDAS DIVISION 4 AND 6.
- ALL SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) C900, SDR 35 PIPE PER ASTM D3034 WITH WATERTIGHT JOINTS CONFORMING TO ASTM D3212, UNLESS OTHERWISE NOTED. WHERE SANITARY SEWER PIPE IS NOTED AS PVC C900, THE PIPE SHALL BE IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION (AWWA) C900 WITH WATERTIGHT, PRESSURE RATED JOINTS CONFORMING TO ASTM D3139.
- SANITARY CLEANOUTS SHALL FOLLOW SUDAS SPECIFICATION DETAIL SW-203.
- PIPE LENGTHS SHOWN FOR SANITARY SEWER ARE MEASURED IN LINEAR FEET ALONG THE CENTERLINE OF THE PIPE FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
- A WATERTIGHT PLUG SHALL BE INSTALLED AND LEFT IN PLACE AT THE POINT OF COMMENCEMENT UNTIL THE REMAINDER OF THE PROPOSED SEWERS HAVE BEEN CONSTRUCTED, PROPERLY TESTED AND DEEMED READY FOR FINAL ACCEPTANCE.
- A FLEXIBLE TYPE JOINT SHALL BE FURNISHED AT POINTS OF ENTRY INTO AND EXITING FROM MANHOLE STRUCTURES. THIS FLEXIBLE JOINT MAY CONSIST OF A SLEEVE OF HIGH QUALITY SYNTHETIC RUBBER WITH A SUBSTANTIAL SERRATED FLANGE WHICH IS CAST DIRECTLY INTO THE WALL OF THE MANHOLE BASE TO FORM A WATERTIGHT SEAL AND PROTRUDES OUTSIDE OF THE MANHOLE WALL TO CONNECT WITH THE PIPE ENTERING/EXITING THE MANHOLE. WHEN THIS TYPE OF FLEXIBLE JOINT IS USED, THE SLEEVE SHALL SLIP OVER THE END OF THE PIPE ADJACENT TO THE MANHOLE BASE AND SHALL BE SECURED BY MEANS OF A STAINLESS STEEL STRAP CLAMP EQUIPPED WITH A DRAW BOLT AND NUT.
- WHEN CONNECTING TO AN EXISTING SEWER MAIN BY MEANS OTHER THAN AN EXISTING WYE, TEE, OR MANHOLE, THE FOLLOWING METHOD SHALL BE USED:
  - CIRCULAR SAW-CUT OF SEWER MAIN BY PROPER TOOLS (SEWER-TAP MACHINE OR SIMILAR) AND PROPER INSTALLATION OF HUB-WYE SADDLE OR HUB-TEE SADDLE.
- THE CONTRACTOR IS REQUIRED TO RECORD THE LOCATION OF ALL SEWERS AND FURNISH THE INFORMATION TO THE PROJECT ENGINEER AND/OR OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL LOCATE ALL SEWERS BY MEASUREMENTS TO LOT CORNERS OR OTHER PERMANENT SITE FEATURE AND SHALL FURNISH A COPY OF SUCH LOCATIONS TO THE PROJECT ENGINEER AND/OR OWNER'S REPRESENTATIVE UPON PROJECT COMPLETION. THIS INFORMATION SHALL ALSO INCLUDE THE DEPTH OF EACH SEWER. IF THE CONTRACTOR FAILS TO PROPERLY LOCATE ANY SEWER, HE SHALL BE RESPONSIBLE FOR ALL COSTS WHICH ARE INCURRED AS A RESULT OF THE IMPROPERLY LOCATED UTILITIES.
- UPON COMPLETION OF THE SANITARY SEWER CONSTRUCTION, INCLUDING THE SERVICE LINES, ALL SEWERS SHALL BE TESTED IN ACCORDANCE WITH SUDAS AND LOCAL REQUIREMENTS AND SPECIFICATIONS AND SHALL BE WITNESSED BY THE LOCAL GOVERNING AUTHORITY OR AUTHORIZED REPRESENTATIVE.

**STORM SEWER NOTES**

- ALL STORM SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES IN THE PLANS AND THE STANDARDS, SPECIFICATIONS, CODES, AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITIES. IN CASE OF CONFLICT, THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.
- STORM SEWER PIPE AND STRUCTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SUDAS DIVISIONS 4 AND 6.
- REINFORCED CONCRETE PIPE SHALL BE CLASS III, PER ASTM C76 WITH TONGUE AND GROOVE JOINTS WRAPPED WITH ENGINEERING FABRIC. WHERE CROSSING WATER LINES, A RUBBER O-RING OR PROFILE GASKET COMPLYING WITH ASTM C443 IS REQUIRED. STORM SEWER SHALL BE MARKED WITH THE DATE OF MANUFACTURE AND ASTM CLASS, AND SHALL BE MANUFACTURED BY AN IDOT CERTIFIED FACILITY. NO LIFT HOLES ARE ALLOWED. THE MINIMUM WALL THICKNESS FOR ALL RCP STORM SEWER SHALL BE B-WALL (AS DEFINED IN ASTM C76 AND ASTM C855).
- HDPE STORM SEWER PIPE SHALL BE TYPE S CORRUGATED EXTERIOR AND SMOOTH INTERIOR HIGH DENSITY POLYETHYLENE PIPE PER AASHTO M294 WITH WATERTIGHT JOINTS CONFORMING TO ASTM D3212.
- PVC STORM SEWER PIPE SHALL BE POLYVINYL CHLORIDE SDR 35 PIPE PER ASTM D3034 WITH WATERTIGHT JOINTS CONFORMING TO ASTM D3212, UNLESS OTHERWISE NOTED.

CONSTRUCTION NOT SPECIFICALLY DETAILED OR SPECIFIED WITHIN THE PLANS OR PROJECT SPECIFICATIONS SHALL CONFORM TO THE MOST RECENT EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS).

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GENERAL NOTES

CLINTON ARMORY SITE DRAINAGE IMPROVEMENTS

SHIVE-HATTERY  
ARCHITECTURE+ENGINEERING

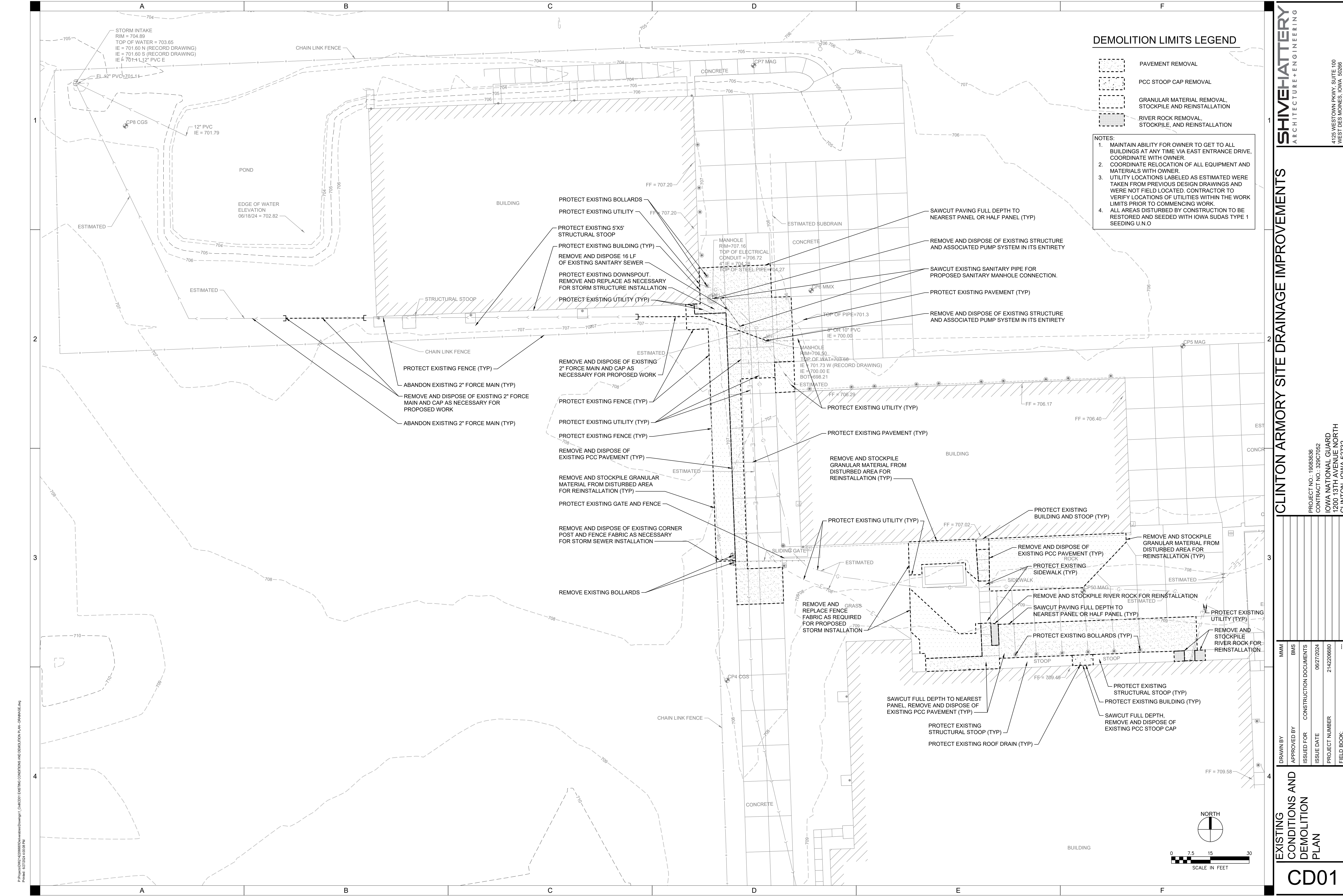
PROJECT NO.: 19063636  
CONTRACT NO.: 329C7052  
IOWA NATIONAL GUARD  
1200 13TH AVENUE NORTH  
CLINTON, IOWA 52732

4125 WESTOWN PKWY, SUITE 100  
WEST DES MOINES, IOWA 50266  
515.223.8104 | SHIVE-HATTERY.COM

DRAWN BY	MMW
APPROVED BY	BMS
ISSUED FOR	CONSTRUCTION DOCUMENTS
ISSUE DATE	08/27/2024
PROJECT NUMBER	2142206800
FIELD BOOK	---

C001





**DEMOLITION LIMITS LEGEND**

- PAVEMENT REMOVAL
- PCC STOOP CAP REMOVAL
- GRANULAR MATERIAL REMOVAL, STOCKPILE AND REINSTALLATION
- RIVER ROCK REMOVAL, STOCKPILE, AND REINSTALLATION

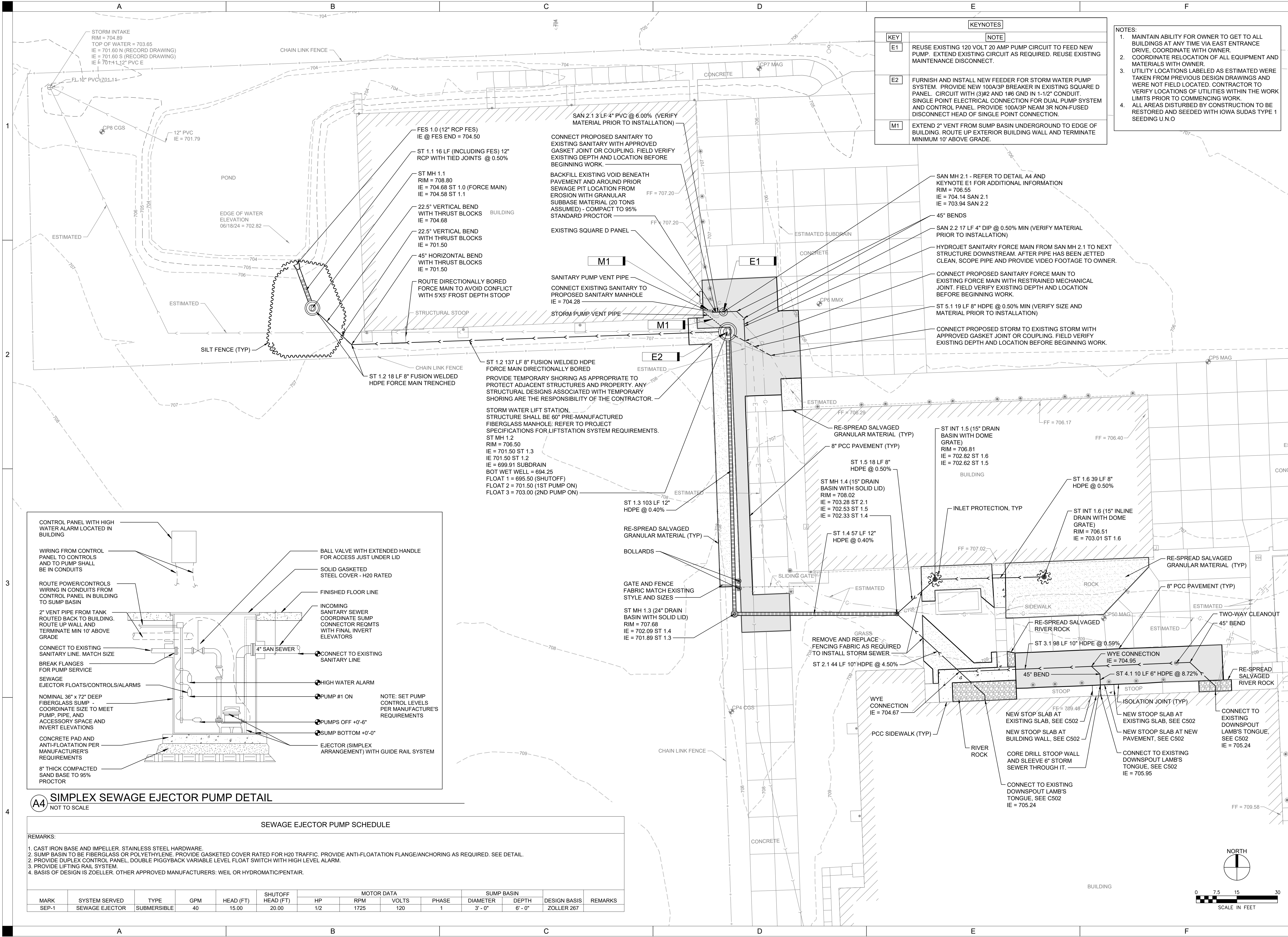
**NOTES:**

1. MAINTAIN ABILITY FOR OWNER TO GET TO ALL BUILDINGS AT ANY TIME VIA EAST ENTRANCE DRIVE, COORDINATE WITH OWNER.
2. COORDINATE RELOCATION OF ALL EQUIPMENT AND MATERIALS WITH OWNER.
3. UTILITY LOCATIONS LABELED AS ESTIMATED WERE TAKEN FROM PREVIOUS DESIGN DRAWINGS AND WERE NOT FIELD LOCATED. CONTRACTOR TO VERIFY LOCATIONS OF UTILITIES WITHIN THE WORK LIMITS PRIOR TO COMMENCING WORK.
4. ALL AREAS DISTURBED BY CONSTRUCTION TO BE RESTORED AND SEEDED WITH IOWA SUDAS TYPE 1 SEEDING U.N.O

DRAWN BY	MMW
APPROVED BY	BMS
ISSUED FOR	CONSTRUCTION DOCUMENTS
ISSUE DATE	08/27/2024
PROJECT NUMBER	2142206800
FIELD BOOK	

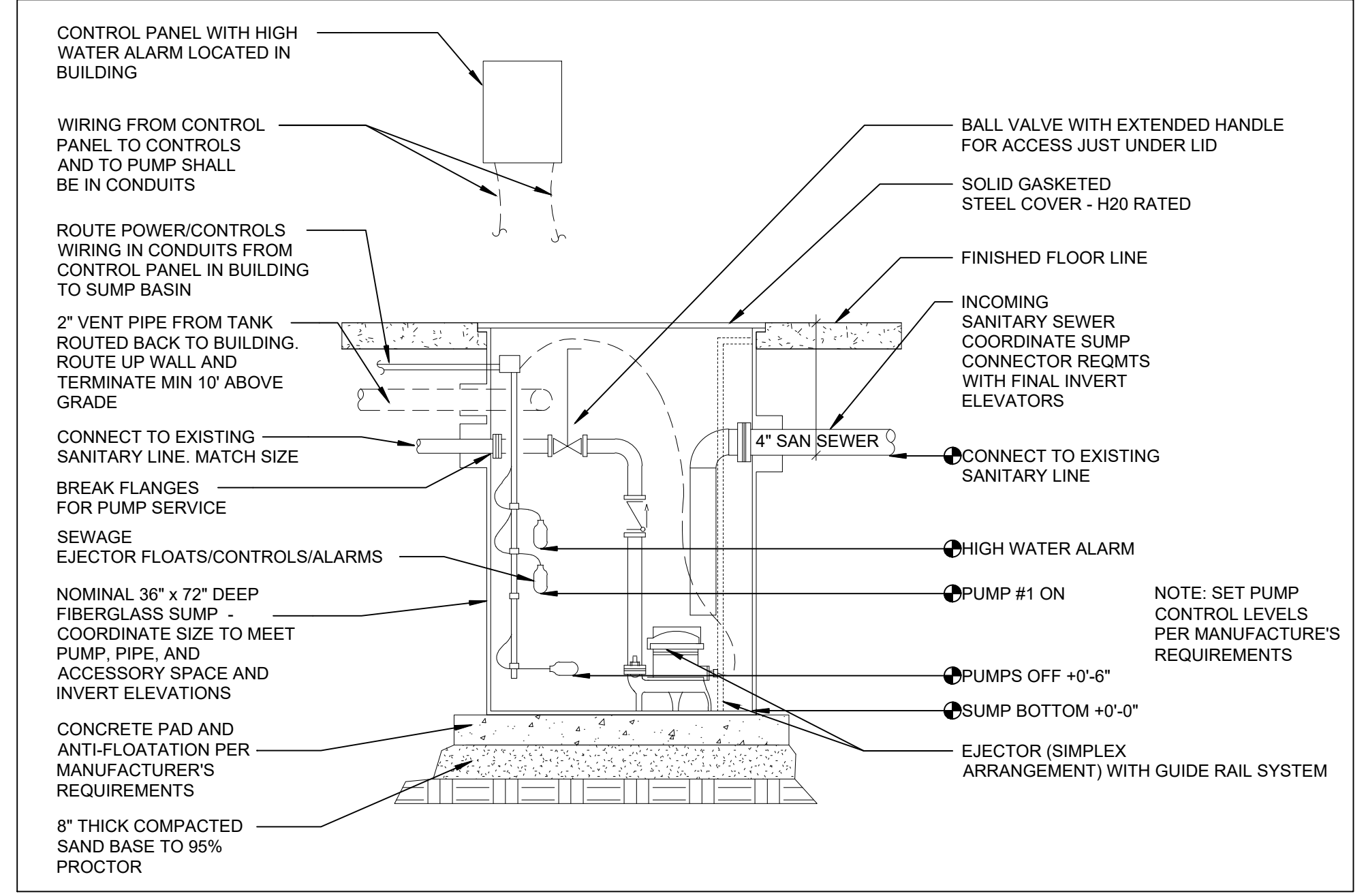
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KEYNOTES	
KEY	NOTE
E1	REUSE EXISTING 120 VOLT 20 AMP PUMP CIRCUIT TO FEED NEW PUMP. EXTEND EXISTING CIRCUIT AS REQUIRED. REUSE EXISTING MAINTENANCE DISCONNECT.
E2	FURNISH AND INSTALL NEW FEEDER FOR STORM WATER PUMP SYSTEM. PROVIDE NEW 100A/3P BREAKER IN EXISTING SQUARE D PANEL. CIRCUIT WITH (3)#2 AND 1#6 GND IN 1-1/2" CONDUIT. SINGLE POINT ELECTRICAL CONNECTION FOR DUAL PUMP SYSTEM AND CONTROL PANEL. PROVIDE 100A/3P NEAM 3R NON-FUSED DISCONNECT HEAD OF SINGLE POINT CONNECTION.
M1	EXTEND 2" VENT FROM SUMP BASIN UNDERGROUND TO EDGE OF BUILDING. ROUTE UP EXTERIOR BUILDING WALL AND TERMINATE MINIMUM 10' ABOVE GRADE.

- NOTES:
1. MAINTAIN ABILITY FOR OWNER TO GET TO ALL BUILDINGS AT ANY TIME VIA EAST ENTRANCE DRIVE. COORDINATE WITH OWNER.
  2. COORDINATE RELOCATION OF ALL EQUIPMENT AND MATERIALS WITH OWNER.
  3. UTILITY LOCATIONS LABELED AS ESTIMATED WERE TAKEN FROM PREVIOUS DESIGN DRAWINGS AND WERE NOT FIELD LOCATED. CONTRACTOR TO VERIFY LOCATIONS OF UTILITIES WITHIN THE WORK LIMITS PRIOR TO COMMENCING WORK.
  4. ALL AREAS DISTURBED BY CONSTRUCTION TO BE RESTORED AND SEEDED WITH IOWA SUDAS TYPE 1 SEEDING U.N.O



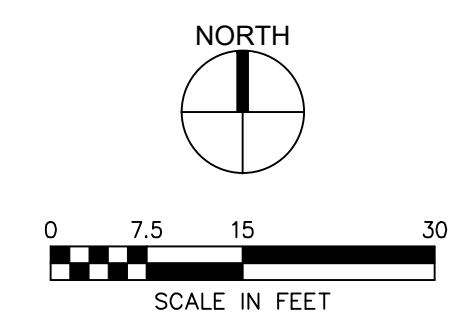
**A4 SIMPLEX SEWAGE EJECTOR PUMP DETAIL**  
NOT TO SCALE

**SEWAGE EJECTOR PUMP SCHEDULE**

REMARKS:

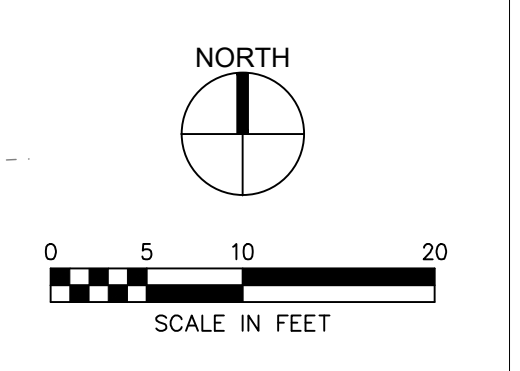
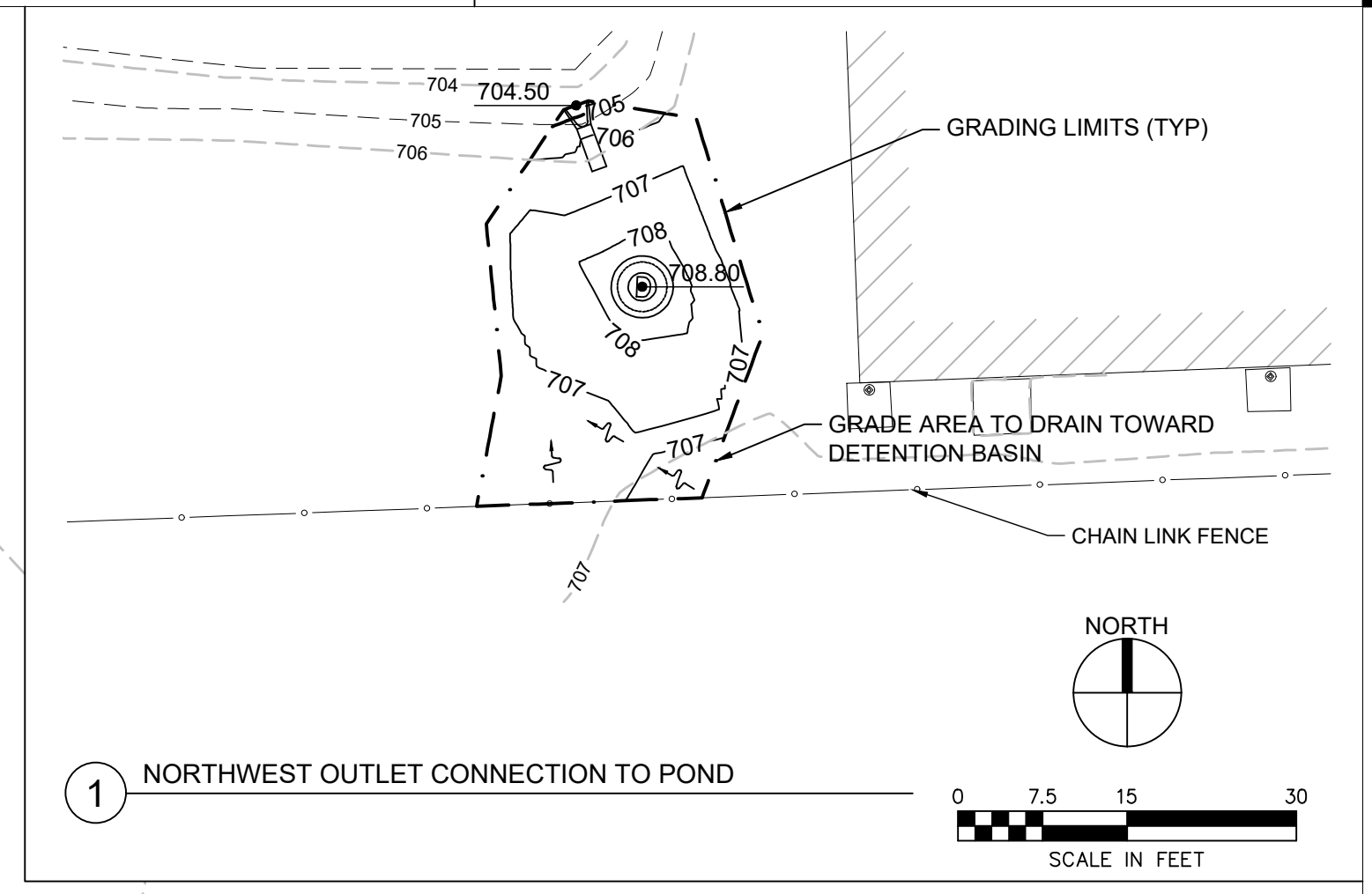
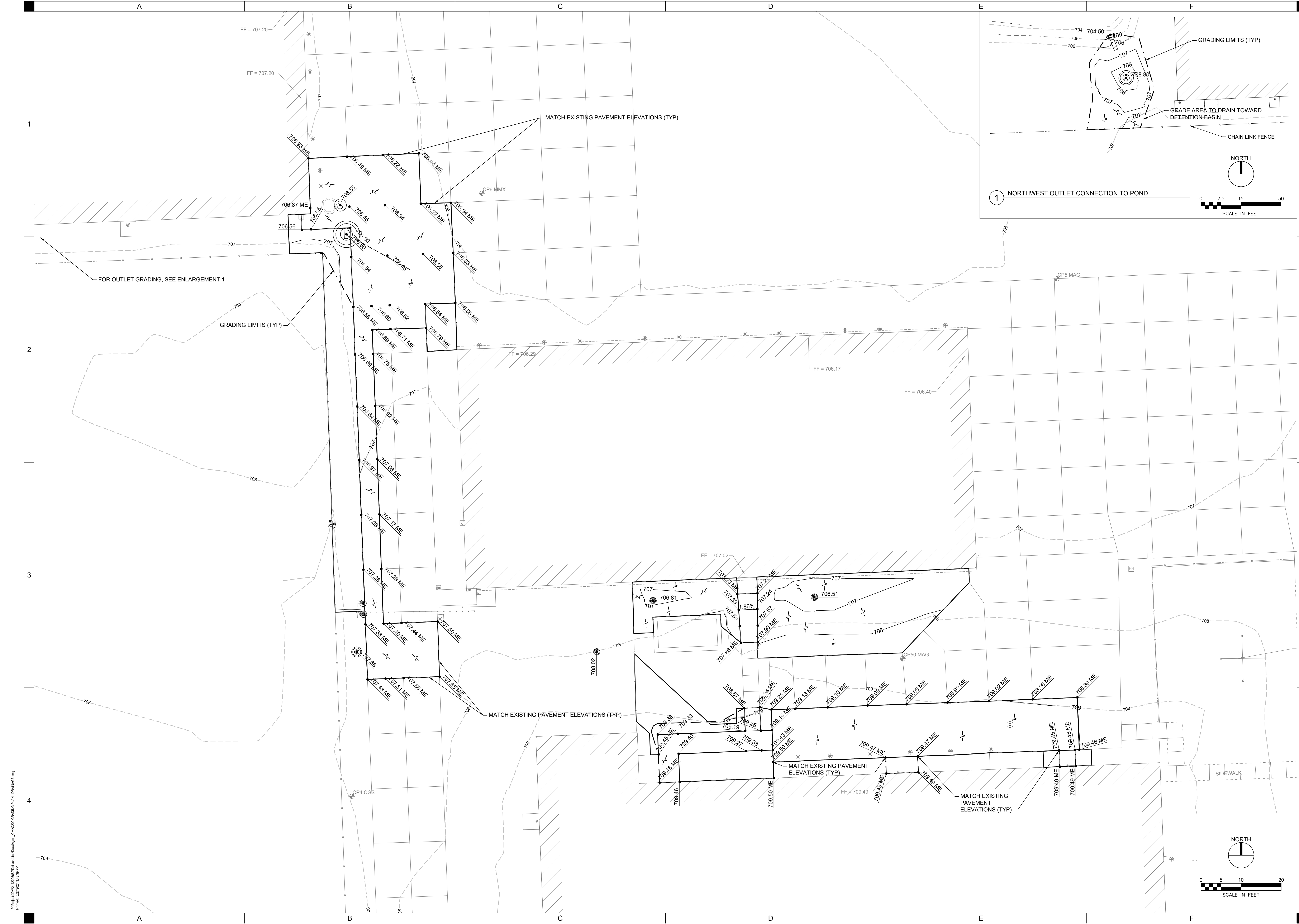
1. CAST IRON BASE AND IMPELLER. STAINLESS STEEL HARDWARE
2. SUMP BASIN TO BE FIBERGLASS OR POLYETHYLENE. PROVIDE GASKETED COVER RATED FOR H20 TRAFFIC. PROVIDE ANTI-FLOATATION FLANGE/ANCHORING AS REQUIRED. SEE DETAIL.
3. PROVIDE DUPLEX CONTROL PANEL. DOUBLE PIGGYBACK VARIABLE LEVEL FLOAT SWITCH WITH HIGH LEVEL ALARM.
4. PROVIDE LIFTING RAIL SYSTEM.
5. BASIS OF DESIGN IS ZOELLER. OTHER APPROVED MANUFACTURERS: WEIL OR HYDRAMATIC/PENTAIR.

MARK	SYSTEM SERVED	TYPE	GPM	HEAD (FT)	SHUTOFF HEAD (FT)	MOTOR DATA				SUMP BASIN		DESIGN BASIS	REMARKS
						HP	RPM	VOLTS	PHASE	DIAMETER	DEPTH		
SEP-1	SEWAGE EJECTOR	SUBMERSIBLE	40	15.00	20.00	1/2	1725	120	1	3'-0"	6'-0"	ZOLLER 267	



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**SHIVE-HATTERY**  
 ARCHITECTURE+ENGINEERING  
 4125 WESTOWN PKWY, SUITE 100  
 WEST DES MOINES, IOWA 50266  
 515.223.8104 | SHIVE-HATTERY.COM

**CLINTON ARMORY SITE DRAINAGE IMPROVEMENTS**

PROJECT NO.: 19083638  
 CONTRACT NO.: 329C7052  
 IOWA NATIONAL GUARD  
 1200 13TH AVENUE NORTH  
 CLINTON, IOWA 52732

DRAWN BY	MMW
APPROVED BY	BMS
ISSUED FOR	CONSTRUCTION DOCUMENTS
ISSUE DATE	08/27/2024
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FIELD BOOK	

**GRADING PLAN**

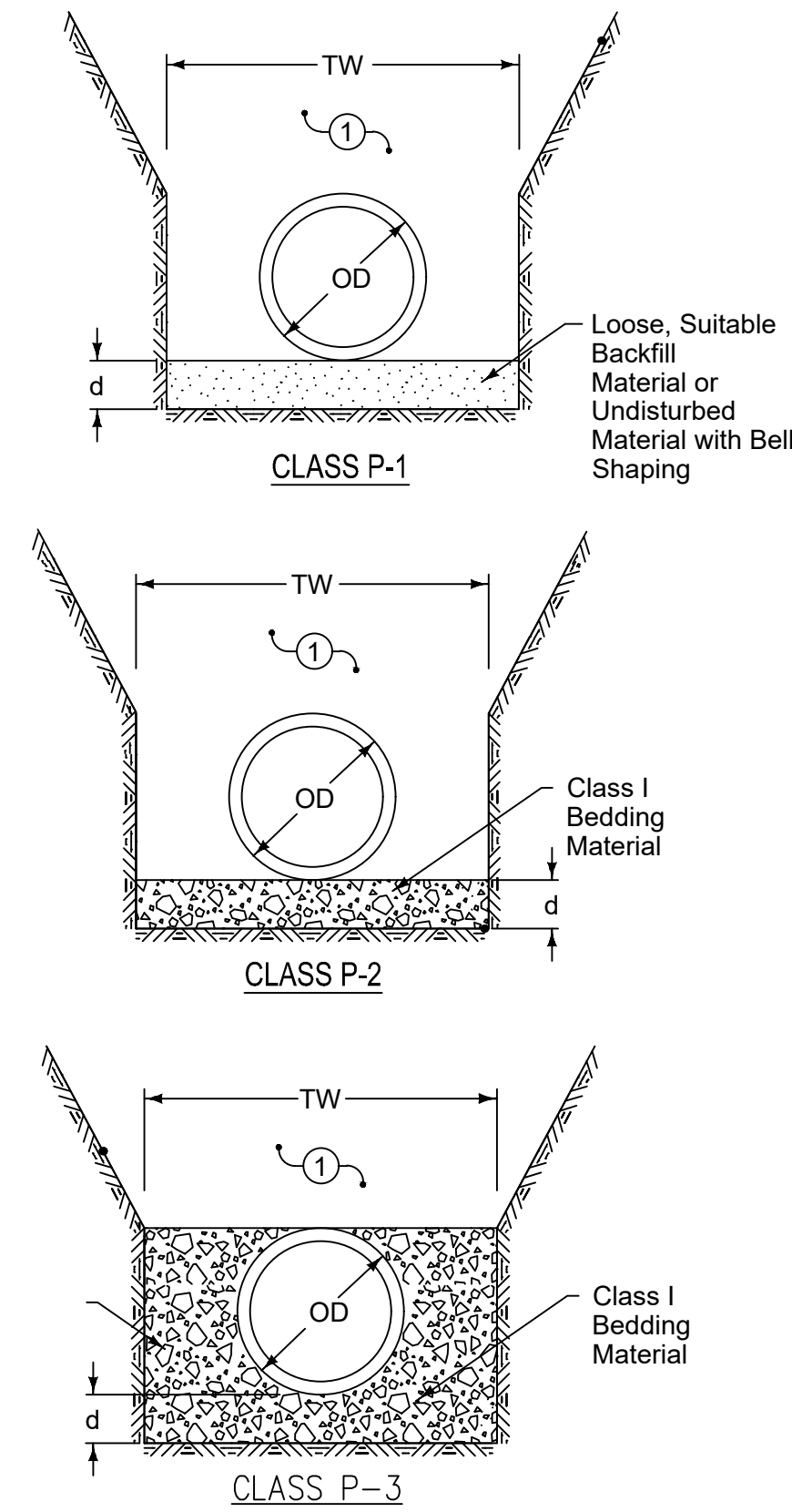
**C201**







**BEDDING CLASSES**



① Place remainder of bedding and backfill material as specified in the contract documents.

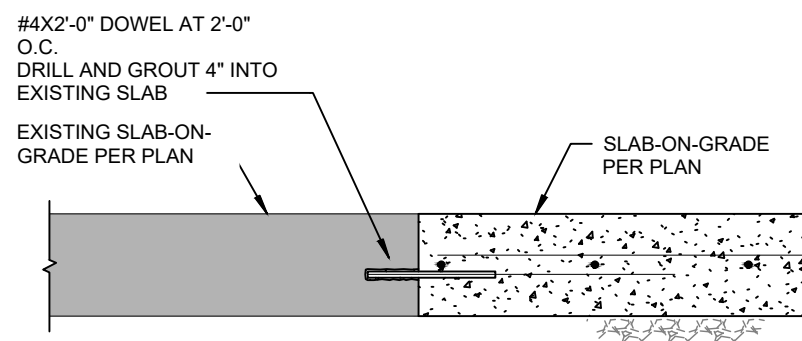
**Key**

- OD = Outside diameter of pipe
- TW = Trench width at top of pipe:  
Min. = OD+18 inches OR 1.25xOD+12 inches  
(whichever is greater)
- d = Depth of bedding material below pipe:  
Min. = OD/8 OR 4 inches  
(whichever is greater)

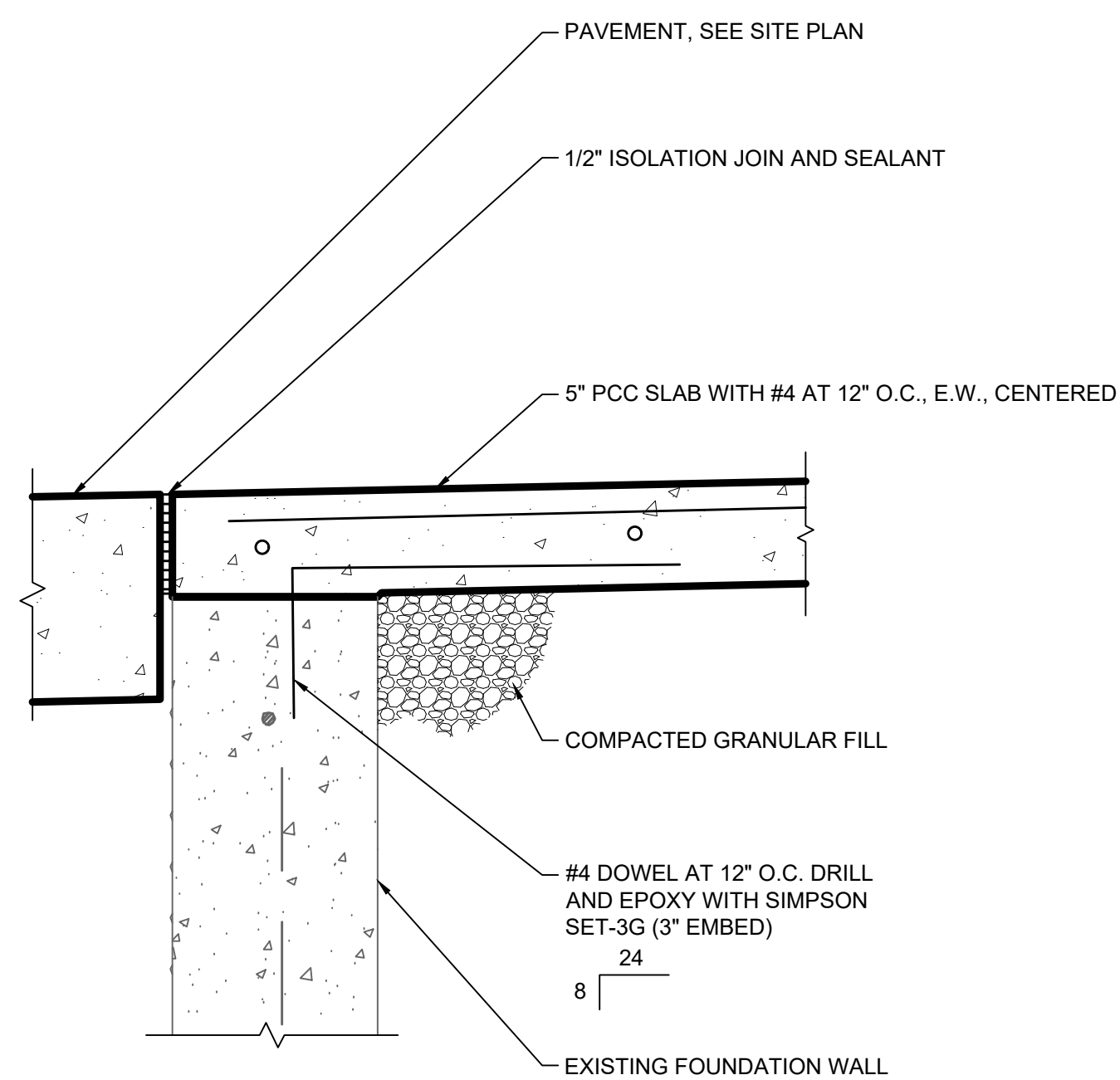
**ALLOWABLE BURY DEPTH**  
PVC, AWWA C900, DR18

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	19"	23"	40"
6	19"	23"	40"
8	19"	23"	40"
10	19"	23"	40"
12	19"	23"	40"
14	19"	23"	40"
16	19"	23"	40"
18	19"	23"	40"
20	19"	23"	40"
24	19"	23"	40"

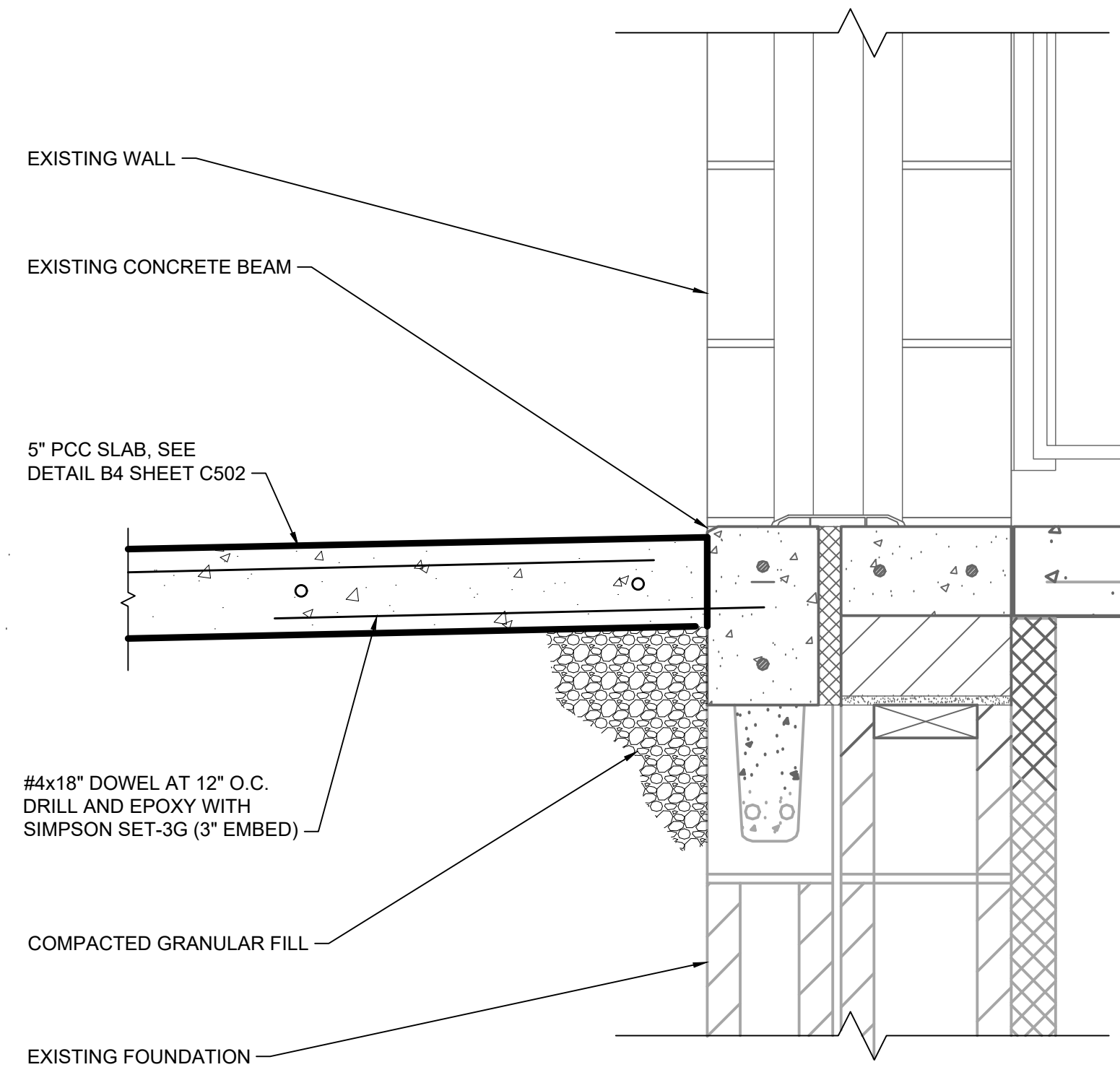
**A4** PRESSURE PIPE BEDDING  
NOT TO SCALE



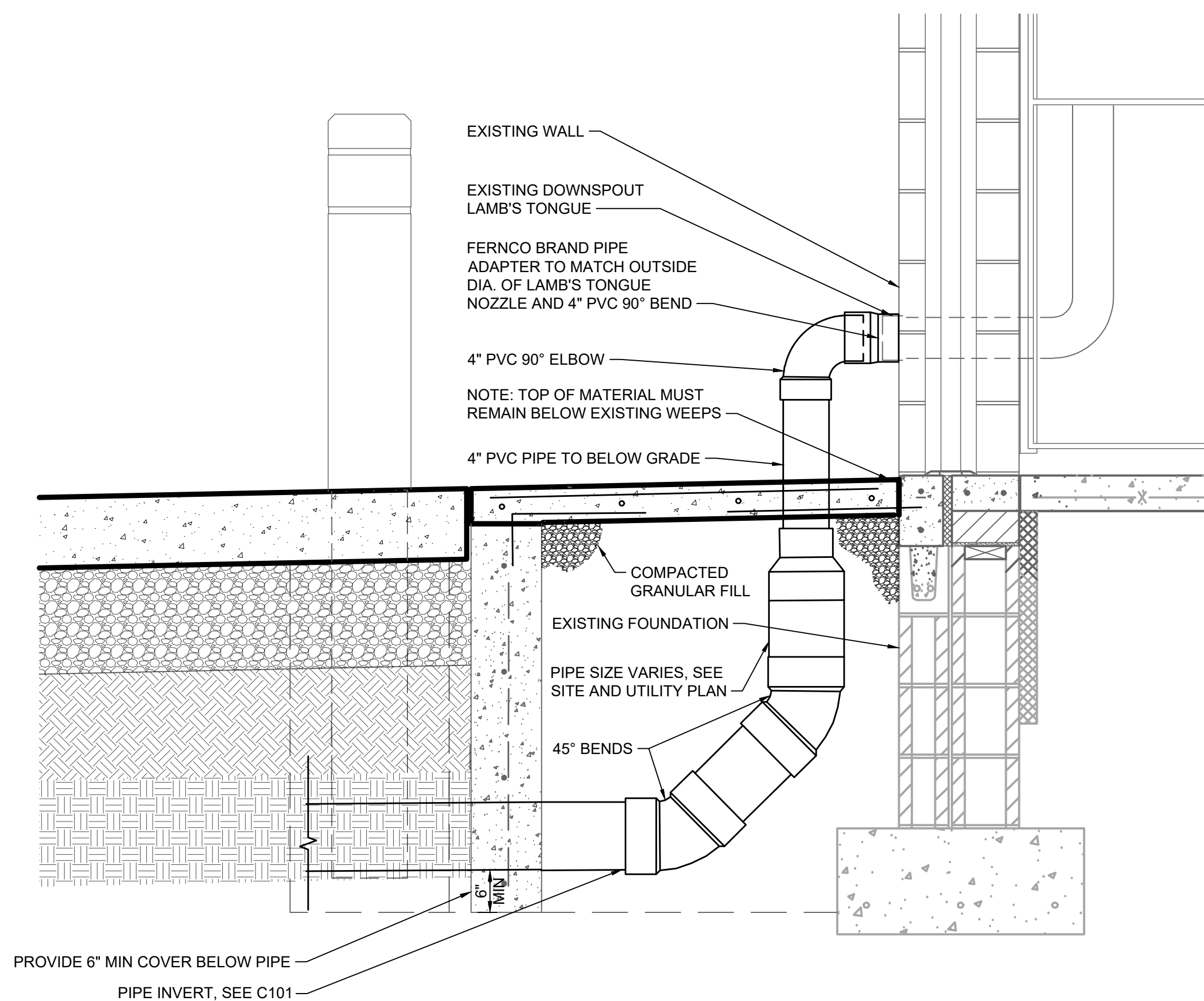
**B2** NEW STOOP SLAB AT EXISTING SLAB  
NOT TO SCALE



**B4** NEW STOOP SLAB AT NEW PAVEMENT  
NOT TO SCALE



**D2** NEW STOOP SLAB AT BUILDING WALL  
NTS



**D4** EXISTING DOWNSPOUT LAMB'S TONGUE CONNECTION  
NTS

DRAWN BY	MMW
APPROVED BY	BMS
ISSUED FOR	CONSTRUCTION DOCUMENTS
ISSUE DATE	08/27/2024
PROJECT NUMBER	2142206800
FIELD BOOK	