

# ACADIA METHODIST JV BEHAVIORAL HEALTH HOSPITAL

SOUTH 24TH STREET AND RICHARD DOWNING AVENUE,  
COUNCIL BLUFFS, IOWA 51501

## CONSTRUCTION DOCUMENTS

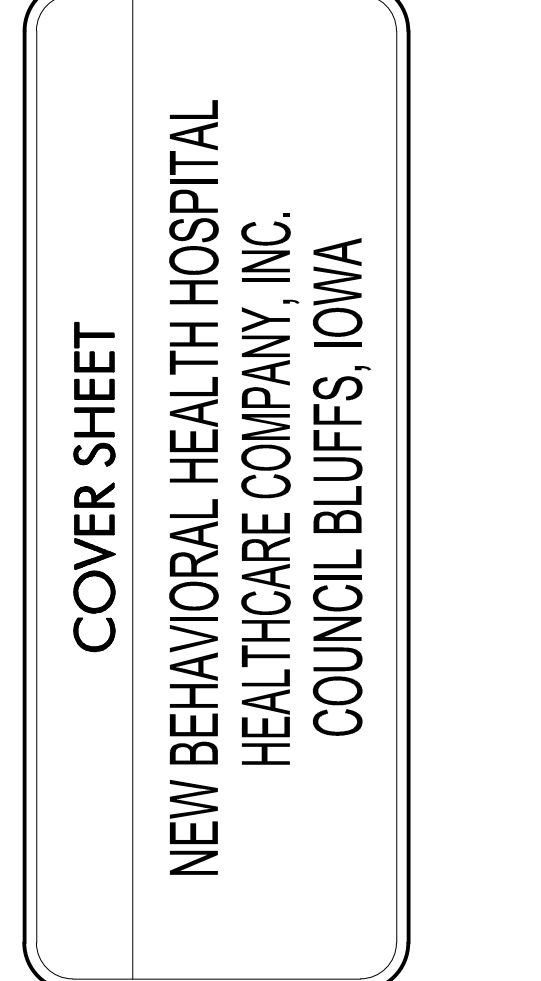
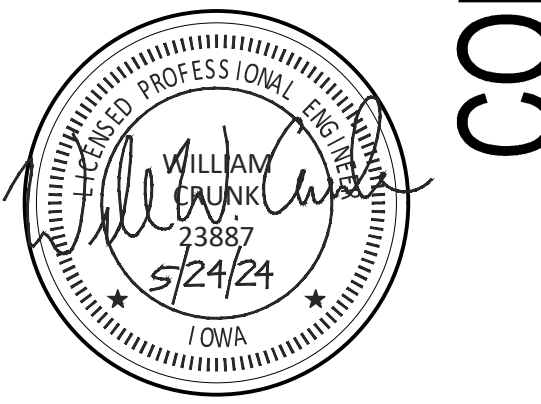
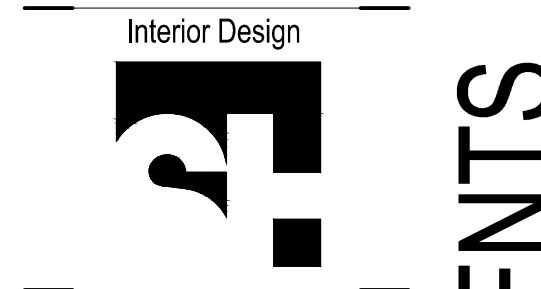


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Mechanical/Electrical Engineering



3/29/24 ADDM #4  
5/24/24 ADDM #6

30 Oct 2023  
AHC2246

**C0.0**

CONSTRUCTION DOCUMENTS

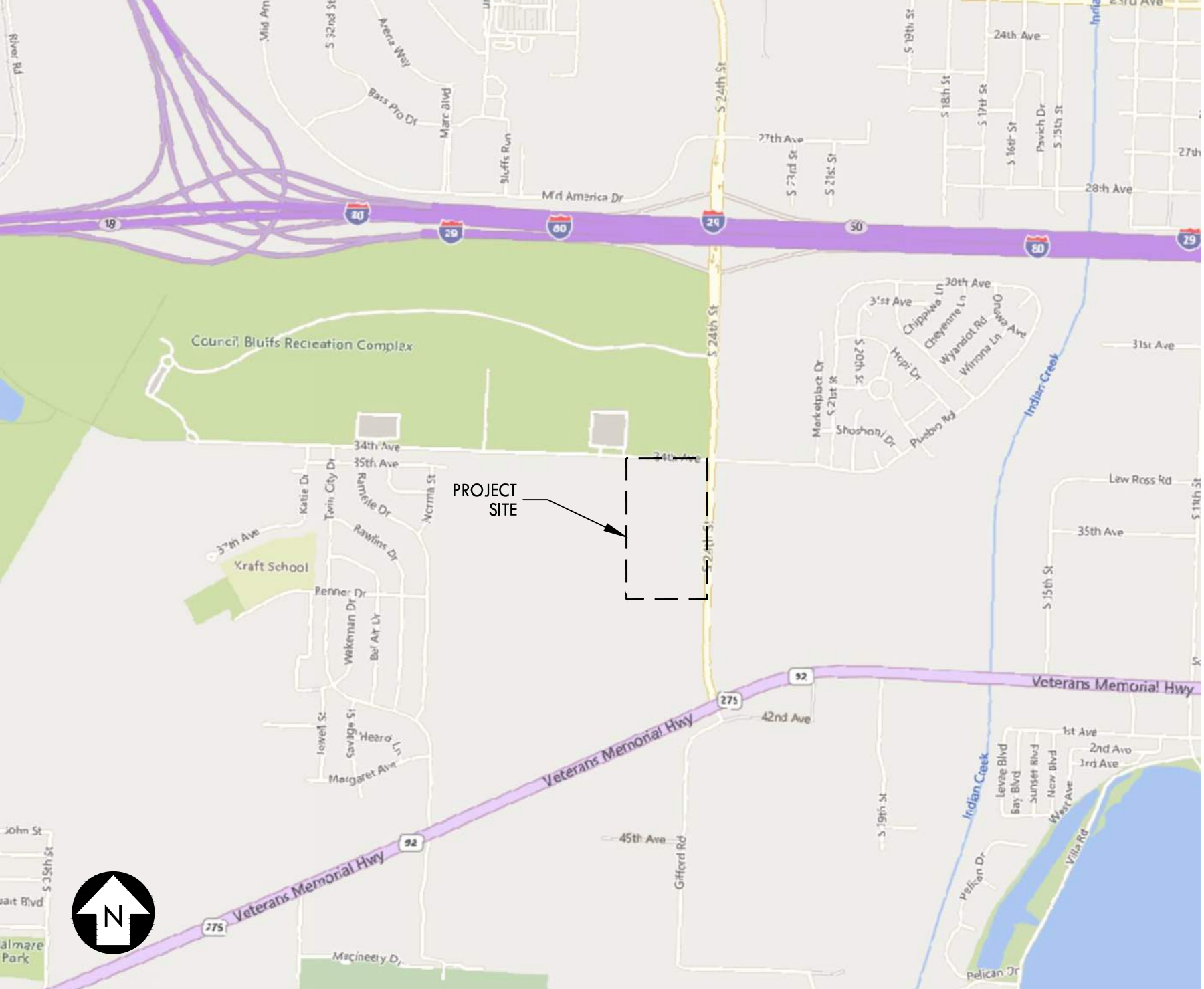
### GENERAL INFORMATION

**DEVELOPER**

Acadia Healthcare

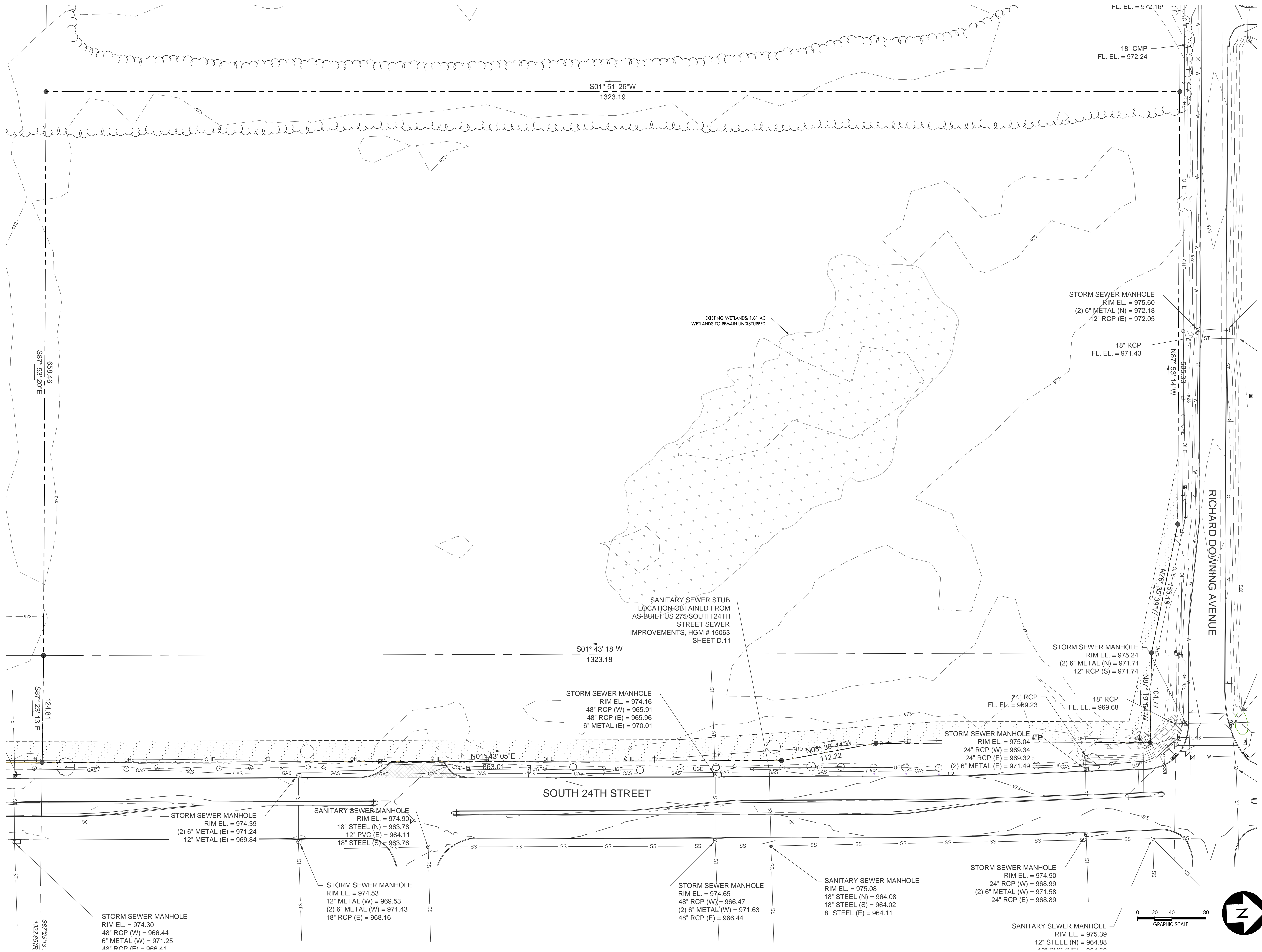
**CIVIL ENGINEER**

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LOCATION MAP  
NOT TO SCALE

Sheet Number	Sheet Title
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C1.0	EXISTING CONDITIONS
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C3.0	INITIAL EROSION & SEDIMENT CONTROL PLAN
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L1.1	OVERALL LANDSCAPE PLAN
L1.2	DETAILED PLANTING PLAN
L1.3	LANDSCAPE DETAILS
L1.4	LANDSCAPE DETAILS



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Civil Engineering



Structural Engineering



STRUCTURAL ENGINEERING, P.C.

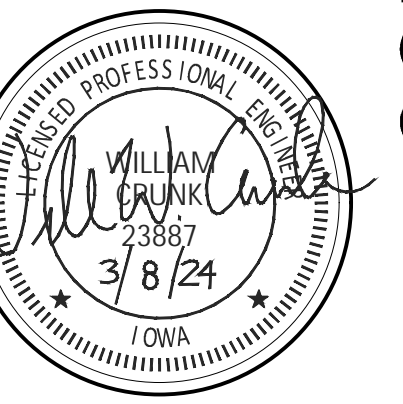
Mechanical/Electrical Engineering



Interior Design



**ACADIA**  
HEALTHCARE

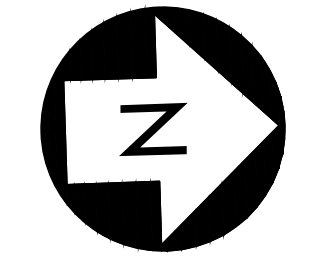
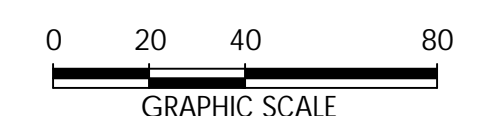


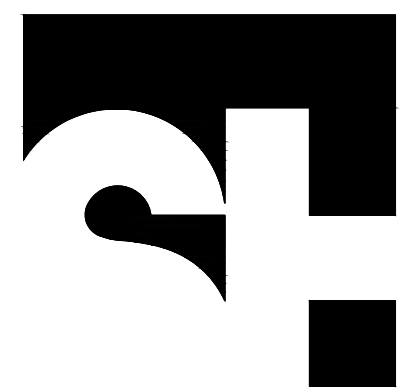
EXISTING CONDITIONS  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA

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AHC2246

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CONSTRUCTION DOCUMENTS





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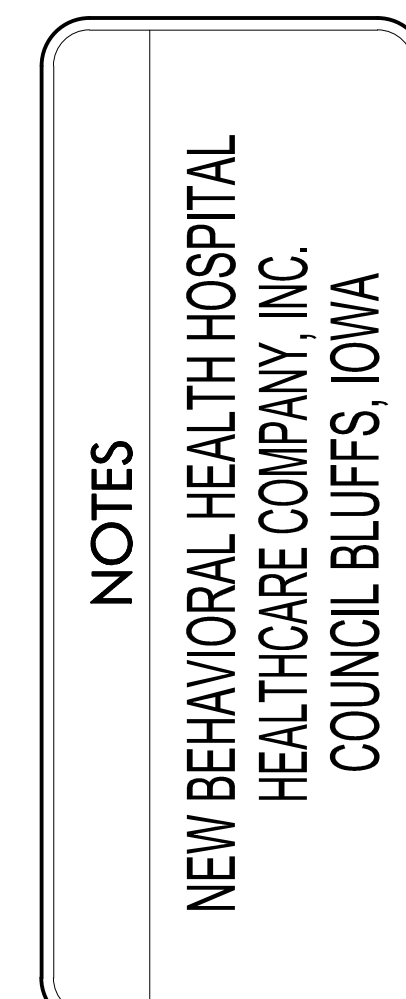
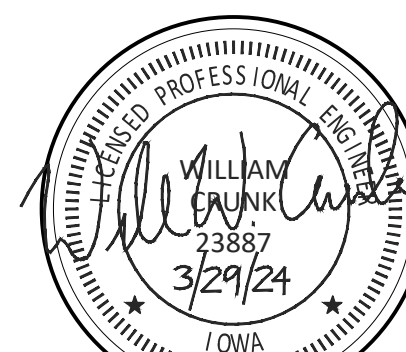
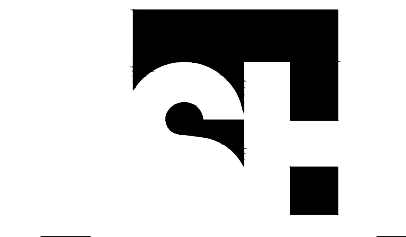
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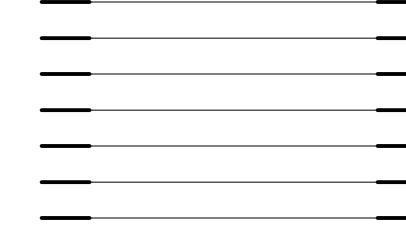
Mechanical/Electrical Engineering



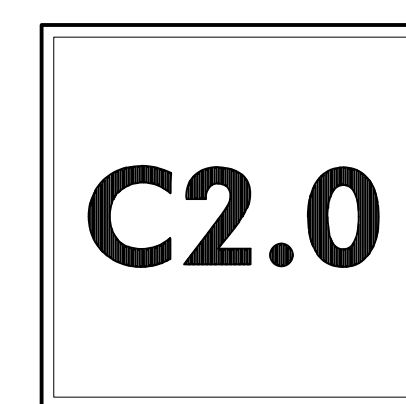
Interior Design



3/29/24 ADDM #4



30 Oct 2023  
AHC2246



CONSTRUCTION DOCUMENTS

**GENERAL NOTES:**

- BASE INFORMATION WAS TAKEN FROM A BOUNDARY & TOPOGRAPHIC SURVEY PERFORMED BY OLSSON DATED 7/28/23. CRUNK ENGINEERING LLC SHALL NOT BE RESPONSIBLE FOR ERRORS AND OMISSIONS RESULTING FROM THIS INFORMATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL AND LABOR TO CONSTRUCT THE PROJECT AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES, SPECIFICATIONS AND REQUIREMENTS.
- THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE CONSTRUCTION DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL QUANTITIES, TAKE-OFF MEASUREMENTS, MATERIALS, ETC., DURING THE BID PROCESS. ANY QUANTITIES PROVIDED ON PLANS ARE PROVIDED AS A COURTESY. WHEN DISCREPANCIES OCCUR, THE PHYSICAL PLAN TAKES PRECEDENCE.
- A COPY OF THE ELECTRONIC DRAWING FILE MAY BE REQUESTED FROM ENGINEER BY CONTRACTOR TO PROVIDE COORDINATES FOR LOCATION IN FIELD. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REQUEST ELECTRONIC FILES AFTER ANY REVISIONS TO PLANS, IF ANY OCCUR.
- THE CONTRACTOR SHALL CHECK ALL EXISTING CONDITIONS, UTILITY INVERTS, UTILITY ROUTINGS, UTILITY CROSSINGS, AND DIMENSIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANIES. THE CONTRACTOR SHALL CALL NATIONAL ONE CALL (811) 72 HOURS PRIOR TO PROCEEDING WITH ANY EXCAVATION. THE CONTRACTOR SHALL REPAIR ANY DAMAGED UTILITIES ACCORDING TO LOCAL STANDARDS AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL CONFORM TO ALL LOCAL CODES AND RECEIVE APPROVAL WHERE NECESSARY BEFORE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING AND MAINTAINING AS-BUILT INFORMATION WHICH SHALL BE RECORDED AS CONSTRUCTION PROGRESSES OR AT THE COMPLETION OF APPROPRIATE CONSTRUCTION INTERVALS. ALL AS-BUILTS SHALL BE PREPARED IN ACCORDANCE WITH LOCAL AGENCY(S) REQUIREMENTS. IF A CERTIFIED AS-BUILT SURVEY IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A STAMPED SURVEY AND SUBMITTING TO ENGINEER.
- THE CONTRACTOR SHALL LIMIT CONSTRUCTION OPERATIONS TO WITHIN THE LIMITS OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGES OUTSIDE THE LIMITS OF CONSTRUCTION. CARE SHALL BE TAKEN TO PROTECT ANY UTILITIES, TREES, BUILDINGS ETC. WHICH ARE TO REMAIN AND NOT TO BE DISTURBED BY THE CONSTRUCTION.
- EXISTING STANDARDS OF PUBLIC ROADWAYS SHALL BE PATCHED IN ACCORDANCE WITH LOCAL AGENCY STANDARDS WHEREVER UTILITY INSTALLATION REQUIRES REMOVAL OF THE EXISTING PAVEMENT. COORDINATE PAVEMENT TRENCHING LOCATIONS WITH SITE CIVIL, PLUMBING AND ELECTRICAL PLANS.
- DIENSIONS AND COORDINATES PROVIDED ARE TO FACE OF CURB AND/OR EXTERIOR FACE OF BUILDING UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE MANUAL OF ACCIDENT PREVENTION AND CONSTRUCTION ISSUED BY AGC OF AMERICA, INC. AND THE SAFETY AND HEALTH REGULATIONS OF CONSTRUCTION ISSUED BY THE U.S. DEPARTMENT OF LABOR.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY WORKS SUCH AS BRACING, SHEETING AND SHORING, BLASTING PROTECTION, WARNING SIGNS AND BARRICADES, ETC. AS MAY BE NECESSARY FOR THE PROTECTION OF LIFE AND PROPERTY FOR HIS OWN EMPLOYEES AND THE GENERAL PUBLIC.
- PORTIONS OF THE WORK SHOWN ON THESE PLANS MAY REQUIRE TRENCH AND/OR MASS EXCAVATION. IN SOME CASES, THIS WILL REQUIRE THE REMOVAL OF ROCK. IN THE USE OF EXPLOSIVES FOR THE SUBSEQUENT EXCAVATION OF ROCK MATERIAL, ALL APPLICABLE LOCAL AND STATE REQUIREMENTS REGARDING THE USE AND STORAGE OF EXPLOSIVE MATERIAL SHALL BE FOLLOWED. THE PROPER PERMITS MUST BE SECURED AND PRE-BLAST SURVEYS WILL BE CONDUCTED IN AREAS WHERE ADJACENT PROPERTIES OR IMPROVEMENTS OFF OF THE PROJECT PROPERTY COULD BE IMPACTED. IN PORTIONS OF THE PROJECT WHERE TRENCH EXCAVATION IS REQUIRED, THE CONTRACTOR WILL BECOME FAMILIAR WITH ALL APPLICABLE TRENCH SAFETY REQUIREMENTS AND REGULATIONS AND TAKE THE NECESSARY MEASURES TO INSURE THE SAFETY OF HIS EMPLOYEES AND ANY OTHER INDIVIDUALS HAVING A NEED TO BE IN AND AROUND THE WORK.
- ANY WORK UNACCEPTABLE TO THE OWNER'S REPRESENTATIVE OR TO THE LOCAL AGENCY(S) SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

**DEMOLITION NOTES:**

- THE CONTRACTOR SHALL VERIFY THE LIMITS OF DEMOLITION WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNLESS OTHERWISE INDICATED, REMOVING TREES, STUMPS, ROOTS, MUCK, EXISTING PAVEMENT AND ALL OTHER DELETERIOUS MATERIAL. UPON REMOVAL NO ROOT GREATER THAN THREE INCHES IN DIAMETER SHALL REMAIN WITHIN FIVE FEET OF AN UNDERGROUND STRUCTURE OR UTILITY LINE OR UNDER PAVED FOOTINGS OR PAVED AREAS.
- IN AREAS WHERE EXISTING PAVEMENT, WALKS, OR CURBS ARE TO BE REMOVED, SAW CUT TO PROVIDE A CLEAN EDGE. COORDINATE EXTENT OF PAVEMENT DEMOLITION WITH THE LIMIT OF IMPROVEMENTS ON THE SITE LAYOUT PLAN AND UTILITY PLAN.
- THE CONTRACTOR SHALL COORDINATE PHASING OF THE DEMOLITION WITH THE OWNER'S REPRESENTATIVE AND UTILITY PROVIDERS PRIOR TO BEGINNING WORK. DISRUPTION OF EXISTING UTILITY SERVICES AND TRAFFIC PATTERNS SHALL BE MINIMIZED TO THE EXTENT POSSIBLE AND INITIATED ONLY AFTER APPROVAL BY THE LOCAL AGENCY(S) AND UTILITY PROVIDER(S).
- NO UTILITY OR STORM SEWER LINES SHALL BE DEMOLISHED UNTIL THE NEW LINES HAVE BEEN INSTALLED AND ARE PLACED INTO OPERATION.
- THE CONTRACTOR SHALL INCORPORATE INTO HIS WORK ANY ISOLATION VALVES OR TEMPORARY PLUGS REQUIRED TO CONSTRUCT NEW UTILITY LINES AND DEMOLISH EXISTING UTILITY LINES.
- WHERE WATER LINE AND SEWER LINE ABANDONMENT IS PLANNED, THE CONTRACTOR MAY ABANDON WATER LINES AND SEWER LINES IN PLACE WHERE THEY OCCUR AT LEAST 24 INCHES (TO TOP OF PIPE) BELOW FINAL SUBGRADE ELEVATIONS AND OUTSIDE THE BUILDING FOOT PRINT. ALL UTILITY LINES BEING ABANDONED IN PLACE SHALL HAVE ALL ENDS PERMANENTLY CLOSED USING A CONCRETE PLUG.
- CAVITIES AND TRENCHES LEFT BY DEMOLITION WORK SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
- ALL MATERIALS BEING REMOVED AND NOT RELOCATED UNDER THE NEW CONSTRUCTION, INCLUDING TREES AND SHRUBS, SIGNS, LIGHT POLES, UTILITY STRUCTURES, ETC. SHALL BE FIRST OFFERED TO THE OWNER'S REPRESENTATIVE AND IF NOT ACCEPTED SHALL THEN BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

**SITE GRADING NOTES:**

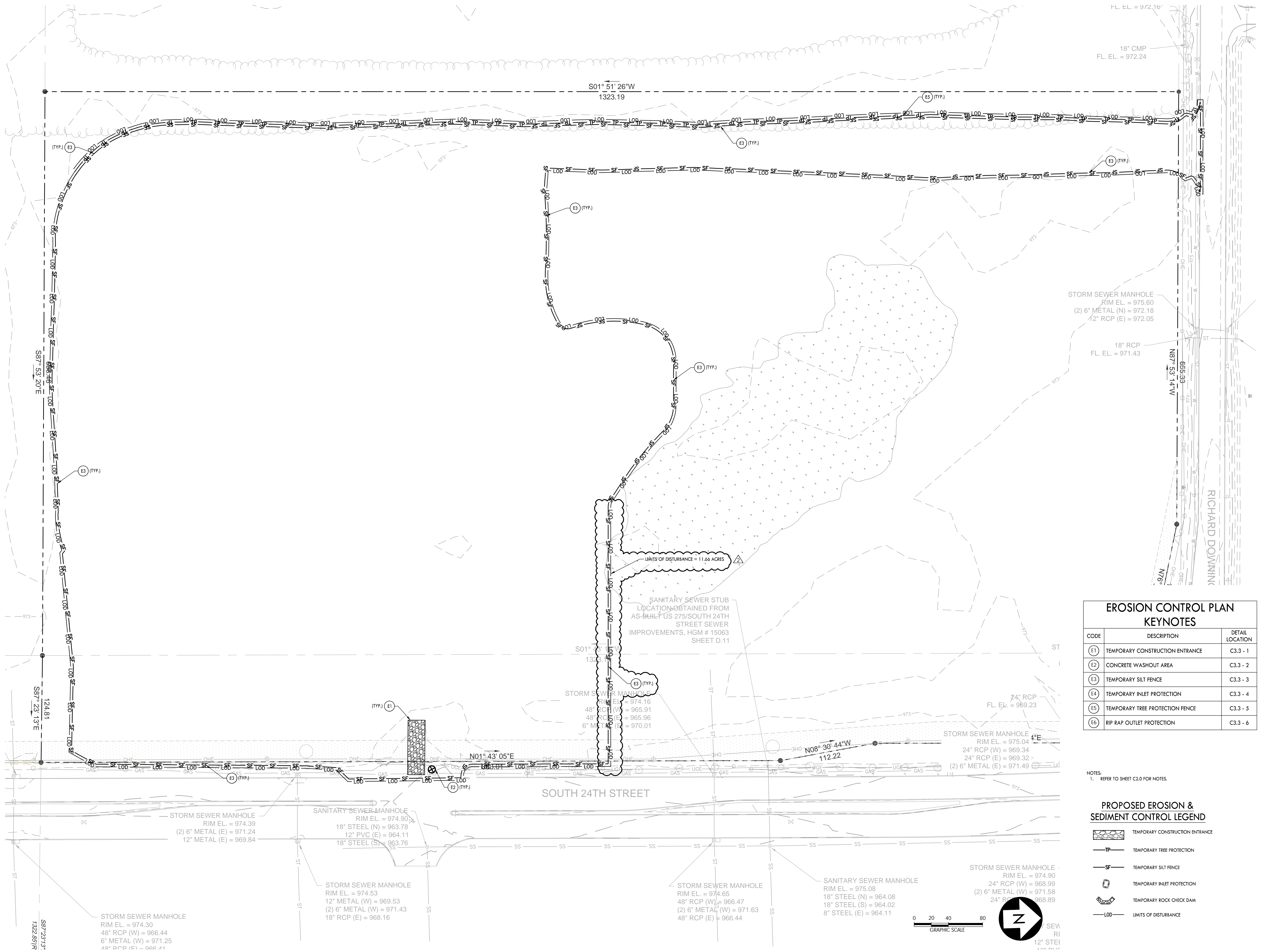
- THE EXISTING AND PROPOSED TOPOGRAPHIC INFORMATION IS BASED OFF THE TOPOGRAPHIC SURVEY PERFORMED BY OLSSON DATED 7/28/23. ELEVATIONS ARE BASED ON NAVD 88. BENCHMARK LOCATION AND ELEVATIONS ARE AS REPRESENTED BY THE SURVEYOR AT THE TIME OF THE SURVEY. THE CONTRACTOR SHALL VERIFY ITS CORRECTNESS PRIOR TO CONSTRUCTION.
- THE DISTURBED AREA FOR THIS PROJECT IS APPROXIMATELY 11.37 ACRES.
- THE SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD ZONE ACCORDING TO PANEL No. 05606 OF THE F.E.M.A. FLOOD INSURANCE RATE MAPS FOR POTTAWATTAMIE COUNTY, IOWA, DATED FEBRUARY 4, 2005.
- MULCH AND SEED ALL DISTURBED AREAS AS SOON AS POSSIBLE AFTER FINAL GRADING IS COMPLETED, UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- THE CONTRACTOR SHALL CHECK EXISTING GRADES AND DIMENSIONS PRIOR TO BEGINNING WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER. THIS GRADING & DRAINAGE PLAN IS NOT A DETERMINATION OR GUARANTEE OF THE SUITABILITY OF THE SUBSURFACE CONDITIONS FOR THE WORK INDICATED. A GEOTECHNICAL SOILS REPORT HAS BEEN PREPARED AND IS AVAILABLE FROM THE OWNER. DETERMINATION OF THE SUBSURFACE CONDITIONS FOR THE WORK INDICATED IS THE CONTRACTOR'S SOLE RESPONSIBILITY.
- IF ANY SPRINGS OR UNDERGROUND STREAMS ARE EXPOSED DURING CONSTRUCTION THE OWNER'S REPRESENTATIVE AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY. PERMANENT MEDICATION MAY BE REQUIRED, THE LOCATION AND SPECIFICATION OF WHICH WILL BE DETERMINED BY THE CONDITIONS WHICH ARE ENCOUNTERED.
- THE PROPOSED GRADING AND DRAINAGE PLAN CONTAIN CONTOUR LINES AND SPOT ELEVATIONS RESULTING FROM AN ENGINEERED DESIGN AND REFLECT A PLANNED INTENT WITH REGARD TO DRAINAGE AND MOVEMENT OF MATERIALS. SHOULD THE CONTRACTOR HAVE ANY QUESTION OF THE INTENT OR ANY PROBLEM WITH THE CONTINUITY OF GRADES, THE ENGINEER SHALL BE CONTACTED IMMEDIATELY.
- ALL CUT AND FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE INDICATED ON PLANS. FILL SLOPES OF 3:1 AND GREATER SHALL BE PLACED AND COMPACTED A MINIMUM OF 3 FEET BEYOND THE PROPOSED SLOPE LIMITS AND THEN EXCAVATED BACK TO THE PROPOSED LOCATION.
- THE MAXIMUM SLOPE WITHIN ACCESSIBLE PARKING SPACES SHALL BE 2.0% IN ANY DIRECTION. THE MINIMUM GRADE ON ASPHALT OR CONCRETE PAVING SHALL BE 1.0% UNLESS OTHERWISE INDICATED ON PLANS.
- PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND NEW PAVEMENT. SLIGHT FIELD ADJUSTMENT MAY BE REQUIRED. THE CONTRACTOR WILL BE REQUIRED TO ADJUST GRADES OF INTERSECTING STREETS, ALLEYS, PUBLIC ENTRANCES AND PRIVATE DRIVES AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES DURING AND AFTER CONSTRUCTION. SOIL AFFECTED BY PERCHED WATER IN FOUNDATION AND PAVEMENT AREAS MUST BE UNDERCUT AND REPLACED WITH SUITABLE FILL MATERIALS APPROVED BY A GEOTECHNICAL ENGINEER. GROUNDWATER INFILTRATION INTO EXCAVATIONS SHOULD BE EXPECTED, AND THE WATER SHALL BE REMOVED USING GRAVITY DRAINAGE OR PUMPING.
- THE CONTRACTOR SHALL TAKE SPECIAL CARE TO COMPACT FILL SUFFICIENTLY AROUND AND OVER ALL PIPES, STRUCTURES, VALVE STEMS, ETC., INSIDE THE PROPOSED PAVED AREAS TO AVOID SETTLEMENT. ANY SETTLEMENT DURING THE WARRANTY PERIOD SHALL BE RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL NOT DISTURB VEGETATION OR REMOVE ANY TREES EXCEPT WHEN NECESSARY FOR GRADING PURPOSES.
- THE CONTRACTOR SHALL STRIP TOPSOIL FROM ALL CUT AND FILL AREAS AND STOCKPILE. UPON COMPLETION OF GENERAL GRADING THE TOPSOIL SHALL BE PLACED OVER ALL DISTURBED AREAS TO A MINIMUM DEPTH OF 6". CONTRACTOR SHALL PROVIDE ADDITIONAL TOPSOIL IF INSUFFICIENT QUANTITIES EXIST ON SITE. THE CONTRACTOR SHALL PROVIDE MEASURES TO PREVENT SEDIMENT FROM STOCKPILED TOPSOIL OR FILL MATERIAL FROM CONTAMINATING SURROUNDING AREAS OR ENTERING NEARBY STREAMS.
- ALL FILL MATERIAL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. THIS MATERIAL SHALL BE PLACED IN LIFTS AND COMPACTED AS DIRECTED BY THE GEOTECHNICAL ENGINEER (TO 95% STANDARD PROCTOR).
- THE CONTRACTOR IS RESPONSIBLE FOR PERMITTING ANY SITE USED FOR DISPOSAL AND/OR STOCKPILE OF ANY MATERIAL FOR SUCH ACTIVITY. A COPY OF THE APPROVED PERMIT MUST BE PROVIDED TO THE INSPECTOR PRIOR TO COMMENCEMENT OF WORK ON ANY PROPERTY. FAILURE TO DO SO MAY RESULT IN THE CONTRACTOR REMOVING ANY ILLEGALLY PLACED MATERIAL AT HIS OWN EXPENSE.
- ANY EXCESS EARTH MATERIAL AS A RESULT FROM GRADING ACTIVITIES SHALL BE FIRST OFFERED TO THE OWNER. IF NOT ACCEPTED BY THE OWNER, THE CONTRACTOR SHALL DISPOSE OF EARTH MATERIAL OFF SITE AT NO ADDITIONAL COST TO THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMPORT SUITABLE MATERIAL FOR GRADING ACTIVITIES IF SUFFICIENT AMOUNTS OF EARTH MATERIAL ARE NOT AVAILABLE ON SITE AT NO ADDITIONAL COST TO THE OWNER.
- SEGMENTAL WALLS SHALL BE PROVIDED BY THE CONTRACTOR ON A DESIGN BUILD BASIS. WALL DESIGN PLANS STAMPED BY A REGISTERED ENGINEER ON THE STATE OF THE PROJECT SHALL BE SUBMITTED TO THE ENGINEER AS A SHOP DRAWING AND INCLUDED IN THE CONSTRUCTION DOCUMENTS.
- TOP OF GRATE ELEVATIONS FOR DRAINAGE STRUCTURES SHALL BE AS SHOWN ON THE DETAIL AND GRADING PLAN, UNLESS NOTED OTHERWISE. THE GRATES SHALL SLOPE WITH THE PAVEMENT AND/OR CURB AND GUTTER GRADES. LOCATION OF DRAINAGE STRUCTURES IS AS SHOWN ON THE GRADING PLAN.
- THE CONTRACTOR SHALL COORDINATE EXACT LOCATION OF STORM DRAIN CONNECTIONS AT THE BUILDING WITH THE PLUMBING PLANS.
- REINFORCED CONCRETE STORM PIPE SHALL MEET ASTM 76CLASS III, WALL TYPE "B" MESH REINFORCEMENT. HIGH DENSITY POLYETHYLENE PIPE (HDPE) SHALL MEET ASTM F 2648. POLYVINYLCHLORIDE PIPE (PVC) SHALL MEET ASTM D3034, SDR 35.

**EROSION CONTROL NOTES:**

- EROSION PREVENTION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE GRADING ACTIVITIES BEGIN AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY BUT MUST BE REPLACED AT THE END OF THE WORKDAY.
- THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION TO MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED AREAS.
- CONSTRUCT SILT BARRIERS BEFORE BEGINNING GRADING OPERATIONS.
- PROVIDE TEMPORARY CONSTRUCTION ACCESS(S) AT THE POINT(S) WHERE CONSTRUCTION VEHICLES EXIT THE CONSTRUCTION AREA. MAINTAIN PUBLIC ROADWAYS FREE OF TRACKED MUD AND DIRT.
- EXISTING VEGETATION AND GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 10 DAYS PRIOR TO GRADING OR EARTH MOVING UNLESS THE AREA IS SEED(ED) AND/OR MULCHED OR OTHER TEMPORARY COVER IS INSTALLED.
- USE TEMPORARY VEGETATION AND/OR MULCH TO PROTECT BARE AREAS FROM EROSION DURING CONSTRUCTION.
- INSPECTION AND MAINTENANCE OF EROSION CONTROL DEVICES SHALL BE PERFORMED ON A REGULAR BASIS. IF AT ANY TIME DURING CONSTRUCTION, THE EROSION AND SEDIMENT CONTROL MEASURES INSTALLED FAIL TO FUNCTION PROPERLY, NEED MAINTENANCE OR REPAIR, OR NEED NEW REPLACEMENT IN KIND, THE CONTRACTOR WILL EFFECT SUCH ACTIONS AS ARE NEEDED TO CORRECT THE SITUATION AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL USE WATER SPRINKLING AND OTHER SUITABLE METHODS AS NECESSARY TO CONTROL DUST AND DIRT CAUSED BY CONSTRUCTION ACTIVITY. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST CONTROL ARE PROHIBITED.
- ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
- STABILIZATION PRACTICES SHOULD BE INITIATED AS SOON AS PRACTICAL, BUT IN NO CASE MORE THAN 7 DAYS WHERE CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED. DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY STABILIZED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRED.
- SEDIMENT SHOULD BE REMOVED FROM SEDIMENT AND EROSION CONTROL DEVICES AS NECESSARY AND MUST BE REMOVED WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50% OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL REMOVED SEDIMENT BUILD UP FROM ALL DRAINAGE STRUCTURES BEFORE ACCEPTANCE BY LOCAL GOVERNING AGENCY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL REMOVE THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ONLY AFTER A GOOD STAND OF VEGETATIVE COVER HAS BEEN ESTABLISHED ON GRADED AREAS AND WHEN IN THE OPINION OF THE OWNER'S REPRESENTATIVE, THEY ARE NO LONGER NEEDED.

**UTILITY NOTES:**

- ALL WATER LINES, SEWER LINES AND APPURTENANCES SHALL BE CONSTRUCTED OF MATERIALS THAT CONFORM WITH LOCAL AGENCY(S) AND UTILITY PROVIDER DETAILS AND SPECIFICATIONS.
- SANITARY SEWER SHALL BE OF MATERIAL AS SPECIFIED ON PLANS. POLYVINYLCHLORIDE (PVC) SHALL MEETASTM D3034 SDR35. DUCTILE IRON PIPE (DIP) SHALL MEET ANSI21.51/AWWA C-151 CLASS 52.
- WATER LINES SHALL BE OF MATERIAL AS SPECIFIED ON PLANS. CEMENT LINED DUCTILE IRON (DIP) SHALL MEET AWWA C-151 CLASS 52. POLYVINYLCHLORIDE (PVC) SHALL MEET AWWA C-900, SDR 18, CLASS 150.
- A MINIMUM COVER OF 36" SHALL BE PROVIDED OVER ALL WATER LINES.
- THE CONTRACTOR SHALL MAINTAIN A HORIZONTAL SEPARATION OF 10 FEET BETWEEN SANITARY SEWER LINES AND WATER LINES. WHERE THESE CRITERIA CANNOT BE MET, THE CONTRACTOR SHALL MAINTAIN 18" VERTICAL SEPARATION BETWEEN WATER AND SEWER LINES.
- EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE SURVEYOR AT THE TIME OF THE TOPOGRAPHIC SURVEY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ENTIRELY ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE DONE BEFORE HE COMMENCES ANY WORK IN THE VICINITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.
- THE CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF THE POINT OF CONNECTIONS OF ALL UTILITIES PRIOR TO ORDERING OF MATERIALS OR COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL COORDINATE THE SEQUENCE OF CONSTRUCTION FOR ALL UTILITY LINES TO PREVENT CONFLICTS WITH EXISTING OR PROPOSED WATER LINES, SANITARY SEWER LINES, SANITARY SEWER SERVICES, STORM SEWERS, OR ANY OTHER UTILITY OR STRUCTURE.
- BEFORE CONNECTIONS ARE MADE INTO EXISTING UTILITIES, THE NEW LINES ARE TO BE FLUSHED AND TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE LOCAL AGENCY(S) AND UTILITY PROVIDER(S) WATER AND SEWER SPECIFICATIONS.
- REDUCED PRESSURE BACKFLOW PREVENTOR (RBP) OR DUAL CHECK WILL BE REQUIRED ON ALL TESTS AND FILL LINES (JUMPER) NEEDED FOR WATER MAIN CONSTRUCTION AND MUST BE APPROVED BY LOCAL AGENCY AND UTILITY PROVIDER.
- THE CONTRACTOR SHALL PROVIDE ALL HORIZONTAL AND VERTICAL BENDS TO ATTAIN THE ALIGNMENT INDICATED ON THE PLANS. PROVIDE VERTICAL BENDS WHERE NECESSARY TO ALLOW WATER LINES TO PASS UNDER OR OVER OTHER UTILITY LINES (ALL BENDS AND BRACES NEEDED MAY NOT BE SHOWN ON THESE PLANS). PROVIDE BRACING AND/OR RODDING AT ALL BENDS AND TEES AS REQUIRED.
- THE CONTRACTOR SHALL COORDINATE EXACT LOCATION OF UTILITY CONNECTIONS AT THE BUILDING WITH PLUMBING PLANS.
- THE EXISTING SITE CONTAINS AN UNDERGROUND IRRIGATION SYSTEM. THE CONTRACTOR MUST PROVIDE CAPS FOR LINES THAT MUST BE CUT, AND RE-ROUTE THE IRRIGATION SYSTEM TO ACCOMMODATE EXCAVATION FOR THE PROPOSED PROJECT. THE IRRIGATION SYSTEM SHALL BE REINSTALLED ON A DESIGN BUILD BASIS PRIOR TO THE END OF CONSTRUCTION.
- EXISTING CASTINGS LOCATED IN FILL/CUT AREAS SHALL BE ADJUSTED TO ENSURE THAT THE TOP OF CASTING IS FLUSH WITH THE FINISHED GRADE.
- THE CONTRACTOR SHALL MARK THE LOCATION OF ALL NEW PVC LINES WITH #8 WIRE.
- ALL CONNECTIONS TO EXISTING MANHOLES SHALL BE BY THE CORING AND RESILIENT SEAL METHOD.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
- ALL FIRE LINES SHALL BE INSTALLED BY A SPRINKLER CONTRACTOR LICENSED IN THE STATE OF THE PROJECT.
- PRIOR TO SUBMITTING OF BID, THE CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED 'AROUND' UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS.



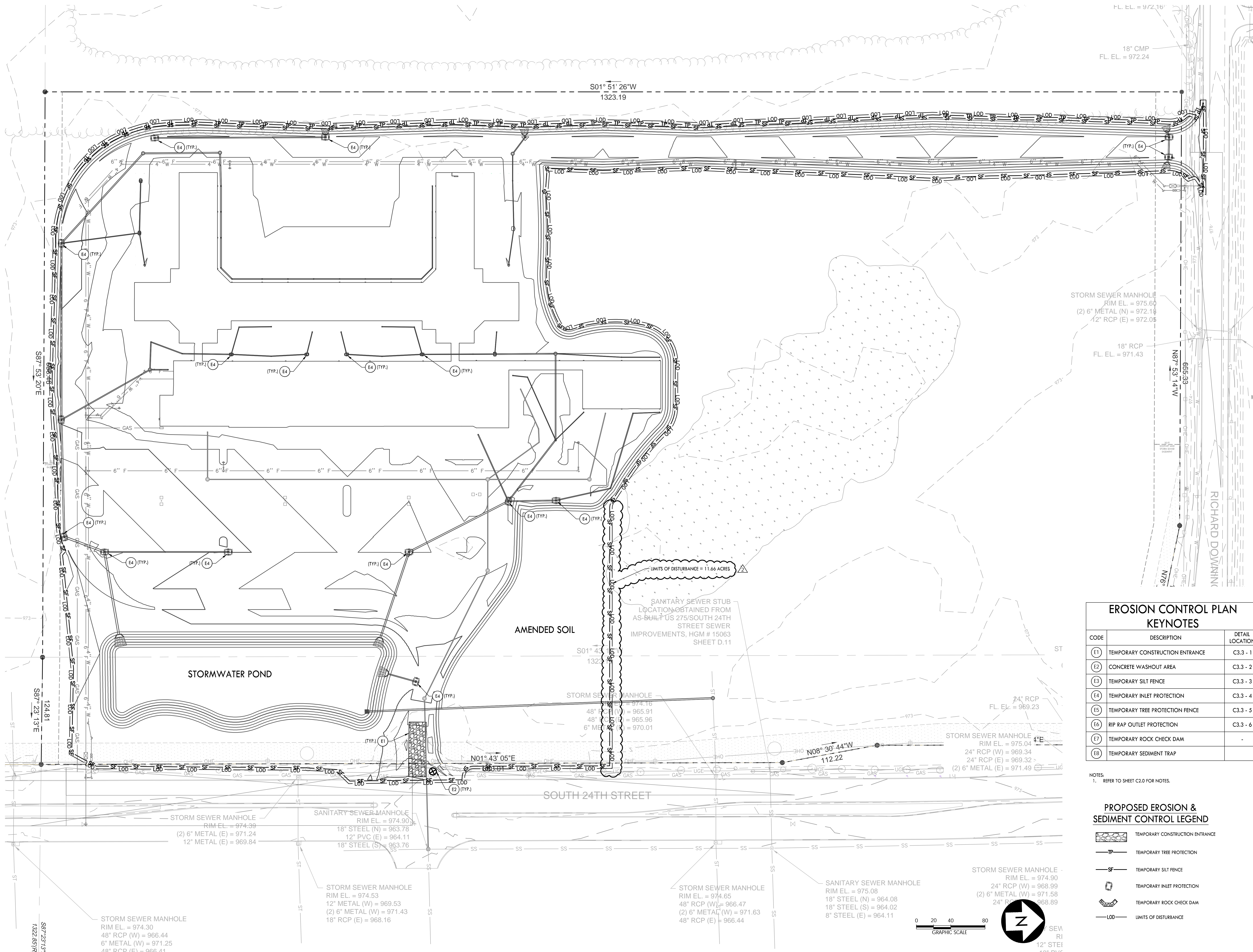
**EROSION CONTROL PLAN KEYNOTES**

CODE	DESCRIPTION	DETAIL LOCATION
E1	TEMPORARY CONSTRUCTION ENTRANCE	C3.3 - 1
E2	CONCRETE WASHOUT AREA	C3.3 - 2
E3	TEMPORARY SILT FENCE	C3.3 - 3
E4	TEMPORARY INLET PROTECTION	C3.3 - 4
E5	TEMPORARY TREE PROTECTION FENCE	C3.3 - 5
E6	RIP RAP OUTLET PROTECTION	C3.3 - 6

**PROPOSED EROSION & SEDIMENT CONTROL LEGEND**

	TEMPORARY CONSTRUCTION ENTRANCE
	TEMPORARY TREE PROTECTION
	TEMPORARY SILT FENCE
	TEMPORARY INLET PROTECTION
	TEMPORARY ROCK CHECK DAM
	LIMITS OF DISTURBANCE

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.



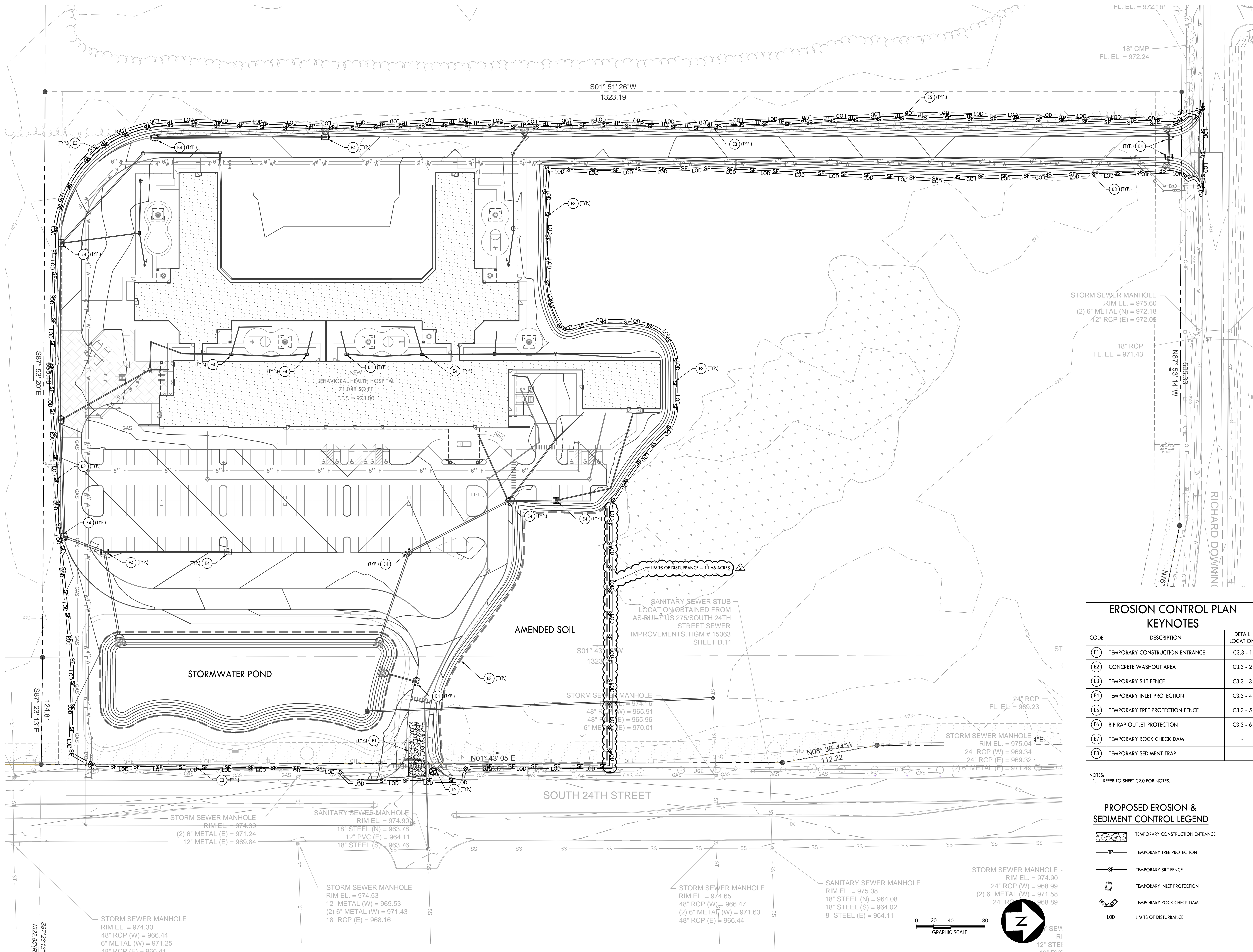
**EROSION CONTROL PLAN  
KEYNOTES**

CODE	DESCRIPTION	DETAIL LOCATION
E1	TEMPORARY CONSTRUCTION ENTRANCE	C3.3 - 1
E2	CONCRETE WASHOUT AREA	C3.3 - 2
E3	TEMPORARY SILT FENCE	C3.3 - 3
E4	TEMPORARY INLET PROTECTION	C3.3 - 4
E5	TEMPORARY TREE PROTECTION FENCE	C3.3 - 5
E6	RIP RAP OUTLET PROTECTION	C3.3 - 6
E7	TEMPORARY ROCK CHECK DAM	-
E8	TEMPORARY SEDIMENT TRAP	-

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

**PROPOSED EROSION &  
SEDIMENT CONTROL LEGEND**

- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY TREE PROTECTION
- TEMPORARY SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY ROCK CHECK DAM
- LIMITS OF DISTURBANCE



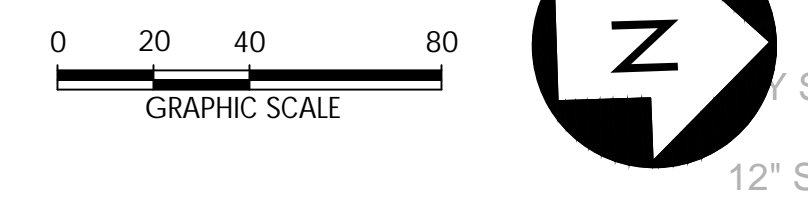
**EROSION CONTROL PLAN  
KEYNOTES**

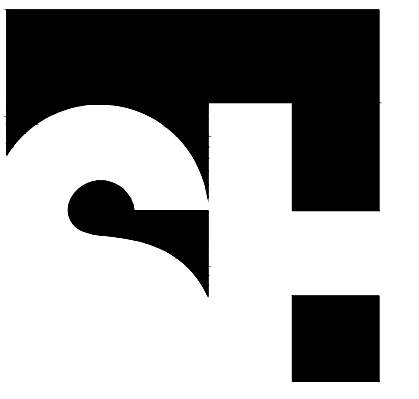
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E1	TEMPORARY CONSTRUCTION ENTRANCE	C3.3 - 1
E2	CONCRETE WASHOUT AREA	C3.3 - 2
E3	TEMPORARY SILT FENCE	C3.3 - 3
E4	TEMPORARY INLET PROTECTION	C3.3 - 4
E5	TEMPORARY TREE PROTECTION FENCE	C3.3 - 5
E6	RIP RAP OUTLET PROTECTION	C3.3 - 6
E7	TEMPORARY ROCK CHECK DAM	-
E8	TEMPORARY SEDIMENT TRAP	-

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

**PROPOSED EROSION &  
SEDIMENT CONTROL LEGEND**

- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY TREE PROTECTION
- TEMPORARY SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY ROCK CHECK DAM
- LIMITS OF DISTURBANCE





STENGEN HILL  
ARCHITECTURE

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LOUISVILLE, KENTUCKY 40202  
502.893.1875  
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Civil Engineering



Structural Engineering



STRUCTURAL ENGINEERING, P.E.

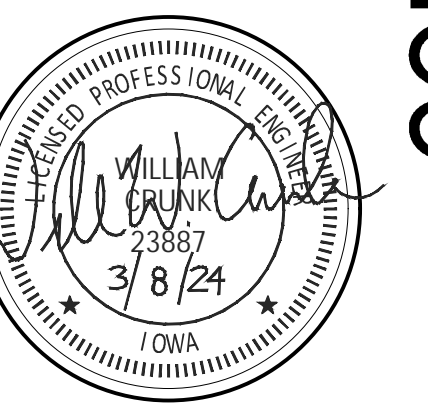
Mechanical/Electrical Engineering



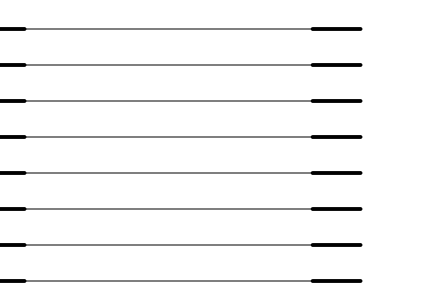
Interior Design



ACADIA  
HEALTHCARE



EROSION & SEDIMENT CONTROL DETAILS  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA



30 Oct 2023  
AHC2246

C3.3

CONSTRUCTION DOCUMENTS

**4 TEMPORARY INLET PROTECTION**  
NOT TO SCALE

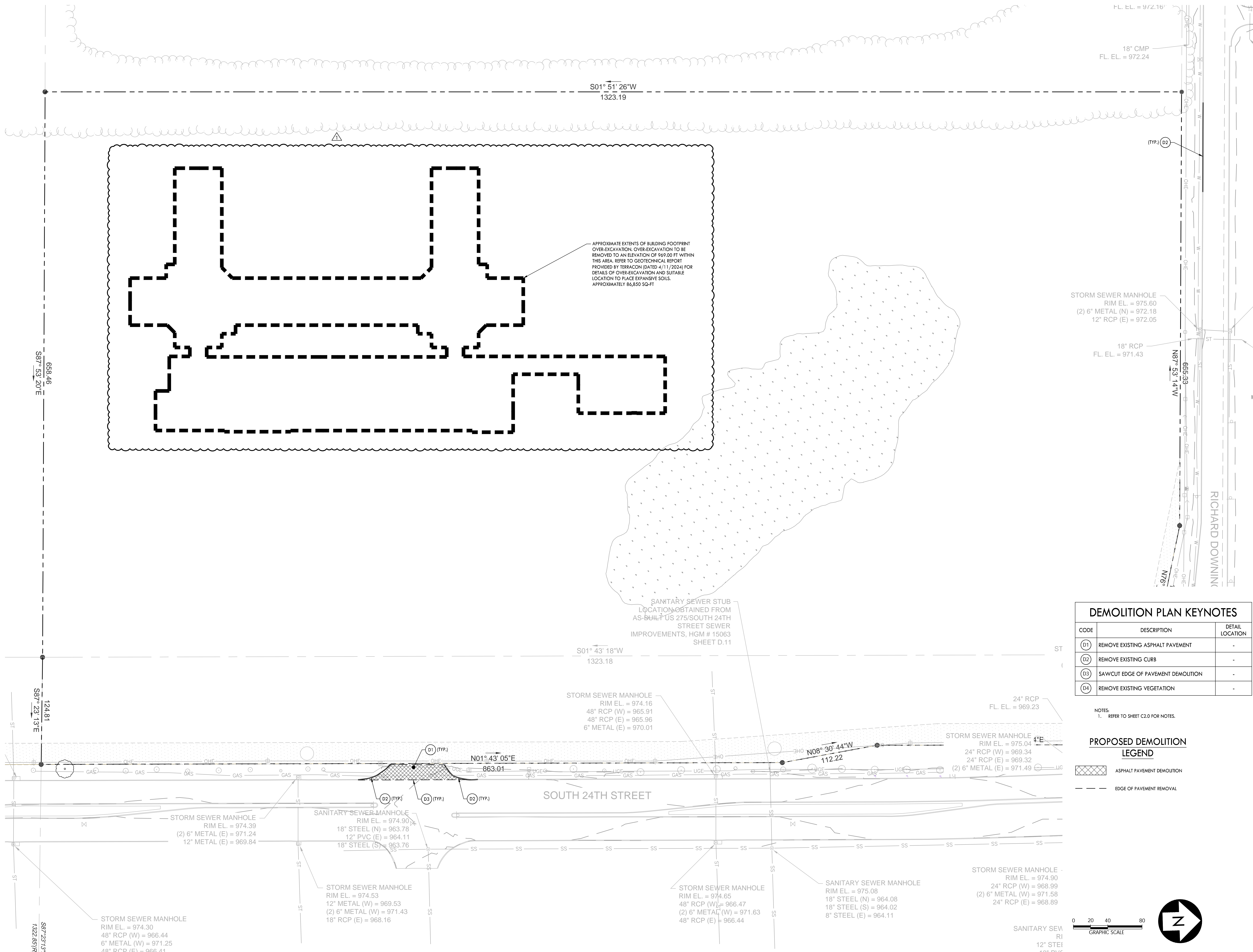
**1 TEMPORARY CONSTRUCTION EXIT**  
NOT TO SCALE

**5 TEMPORARY TREE PROTECTION FENCE**  
NOT TO SCALE

**2 CONCRETE WASHOUT AREA**  
NOT TO SCALE

**6 RIP-RAP OUTLET PROTECTION**  
NOT TO SCALE

**3 TEMPORARY SILT FENCE**  
NOT TO SCALE



**DEMOLITION PLAN KEYNOTES**

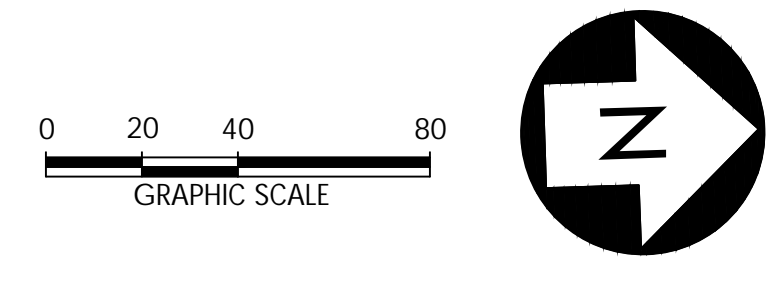
CODE	DESCRIPTION	DETAIL LOCATION
(D1)	REMOVE EXISTING ASPHALT PAVEMENT	-
(D2)	REMOVE EXISTING CURB	-
(D3)	SAWCUT EDGE OF PAVEMENT DEMOLITION	-
(D4)	REMOVE EXISTING VEGETATION	-

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

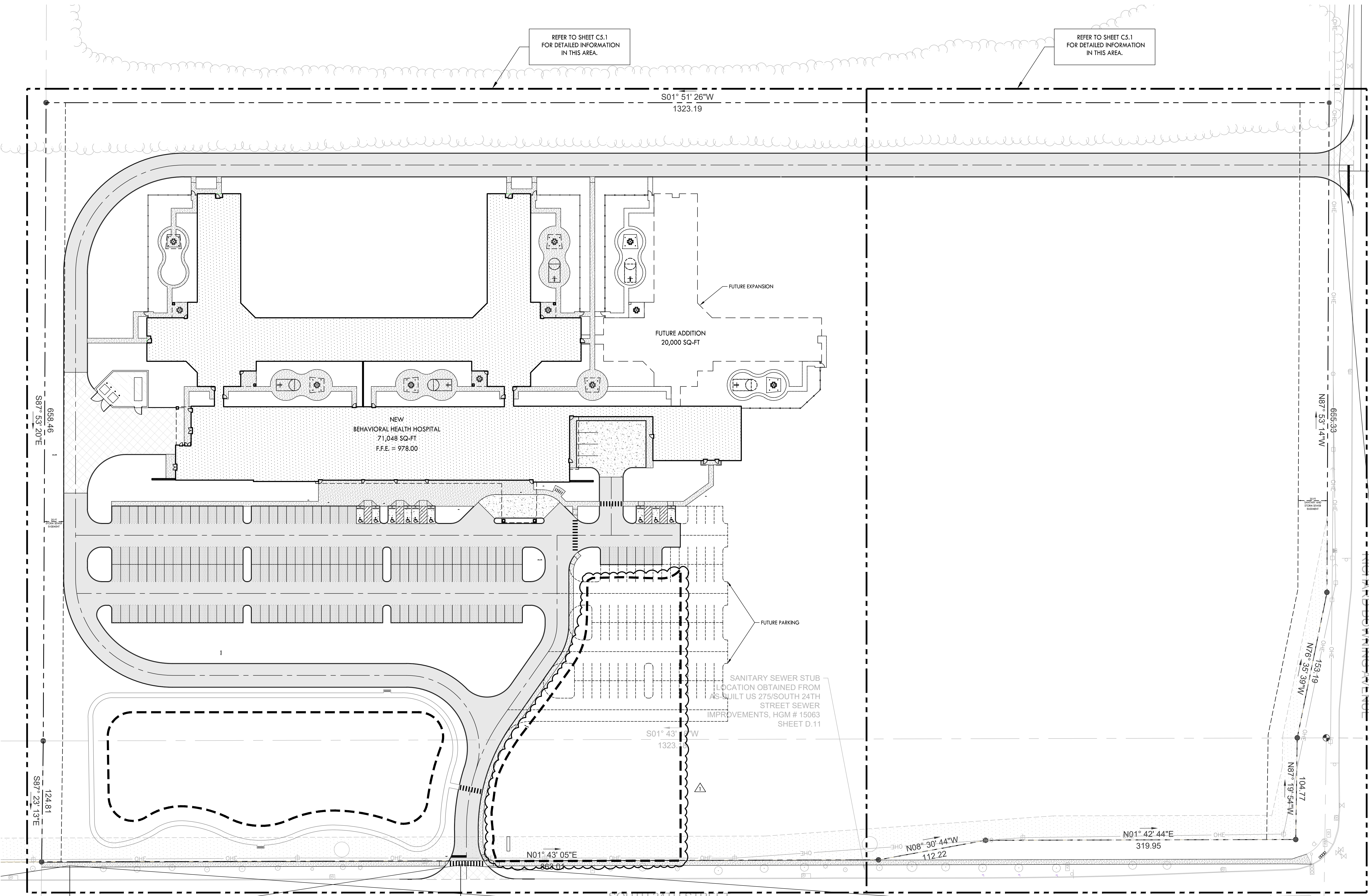
**PROPOSED DEMOLITION LEGEND**

ASPHALT PAVEMENT DEMOLITION

EDGE OF PAVEMENT REMOVAL







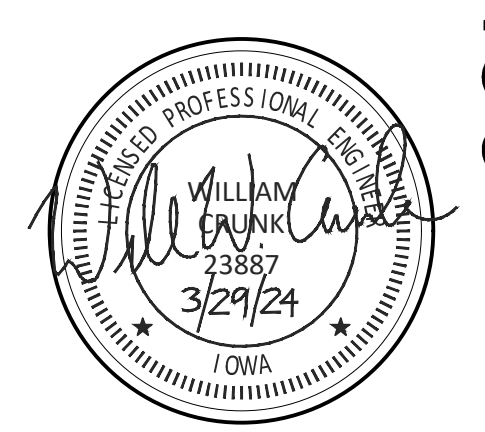
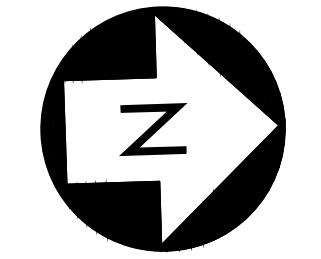
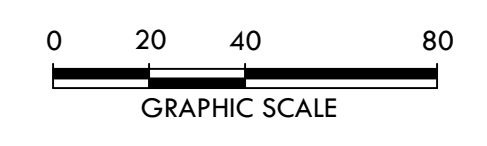
REFER TO SHEET C5.1 FOR DETAILED INFORMATION IN THIS AREA.

REFER TO SHEET C5.1 FOR DETAILED INFORMATION IN THIS AREA.

SANITARY SEWER MANHOLE  
RIM EL. = 974.90  
18" STEEL (N) = 963.78  
12" PVC (E) = 964.11  
18" STEEL (S) = 963.76

SANITARY SEWER MANHOLE  
RIM EL. = 975.08  
18" STEEL (N) = 964.08  
18" STEEL (S) = 964.02  
8" STEEL (E) = 964.11

SANITARY SEWER MANHOLE  
RIM EL. = 975.39  
12" STEEL (N) = 964.88  
12" PVC (E) = 964.88



S01° 51' 26"W  
1323.19

LAYOUT PLAN KEYNOTES

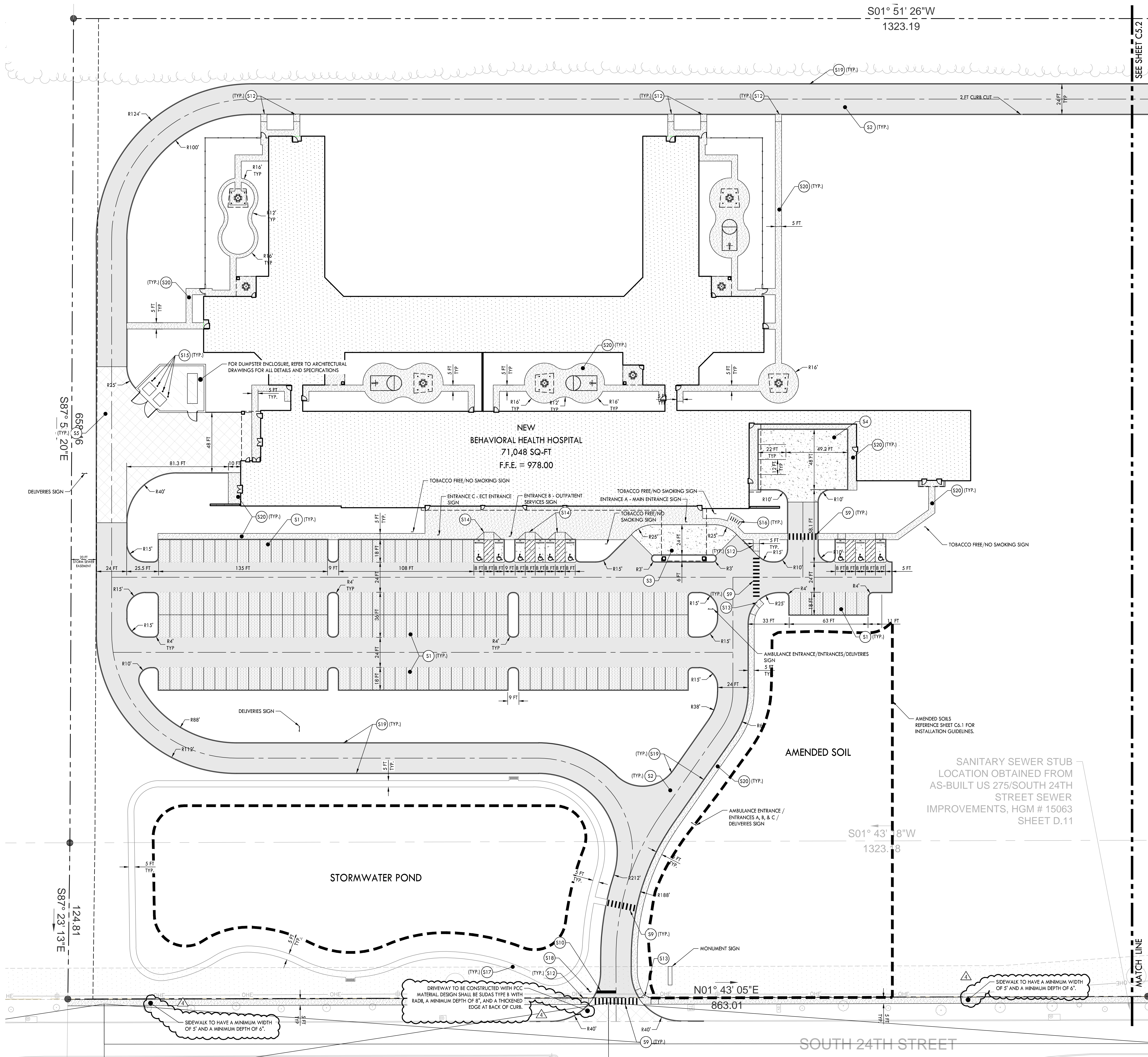
CODE	DESCRIPTION	DETAIL LOCATION
S1	ASPHALT PAVEMENT LIGHT DUTY	C8.0 - 1
S2	ASPHALT PAVEMENT HEAVY DUTY	C8.0 - 1
S3	LIGHT DUTY CONCRETE PAVEMENT	C8.0 - 1
S4	HEAVY DUTY CONCRETE PAVEMENT	C8.0 - 1
S5	CATEGORY E CONCRETE PAVEMENT	C8.0 - 1
S6	CONCRETE WHEEL STOP	C8.0 - 4
S7	ACCESSIBLE PARKING SIGN	C8.0 - 5
S8	ACCESSIBLE RAMP - ADA	C8.0 - 6
S9	PEDESTRIAN CROSSWALK	C8.0 - 7
S10	24" PAINTED STOP BAR	C8.0 - 8
S11	DIRECTIONAL ARROW	C8.0 - 9
S12	ACCESSIBLE RAMP - TYPE A	C8.3 - 1
S13	ACCESSIBLE RAMP - TYPE B	C8.3 - 2
S14	ACCESSIBLE RAMP - TYPE C	C8.3 - 3
S15	CONCRETE BOLLARD	-
S16	BIKE RACK	C8.3 - 5
S17	MULCH PATH	-
S18	STOP SIGN	-
S19	POST CURB	C8.0 - 2
S20	CONCRETE SIDEWALK	C8.0 - 3

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

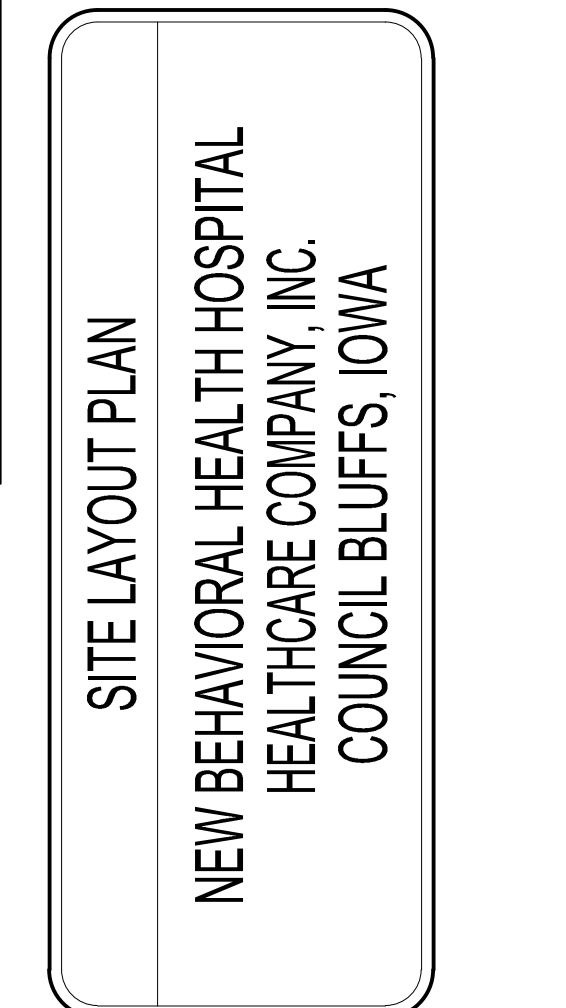
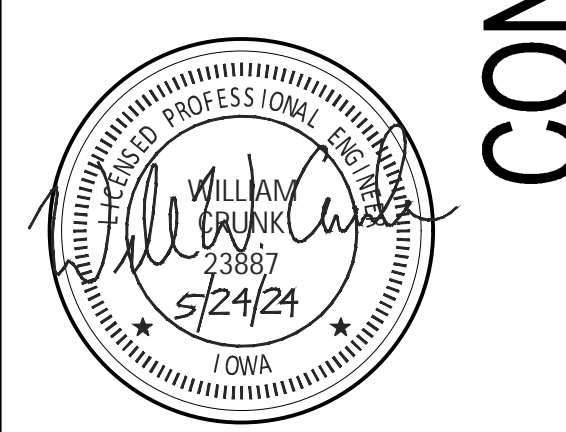
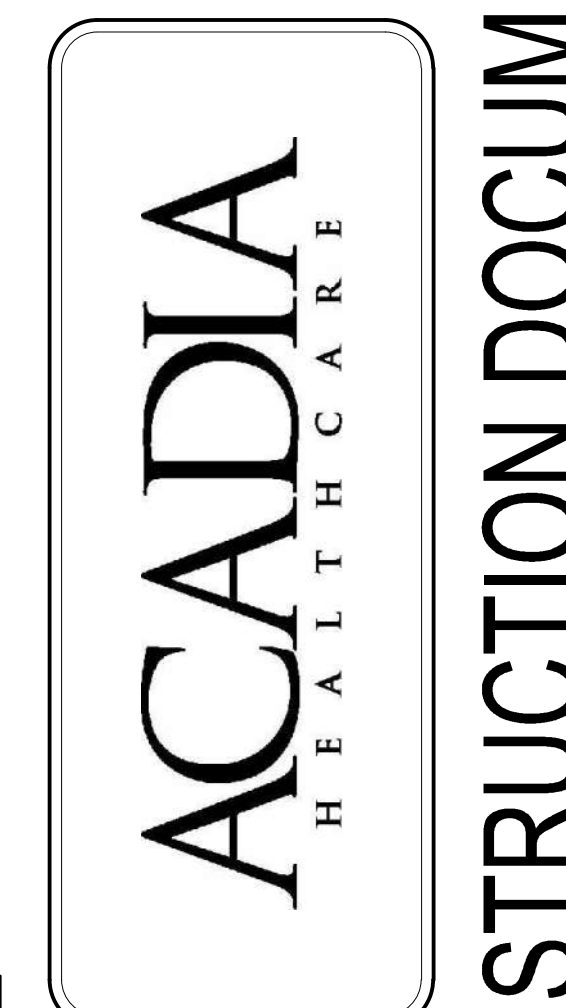
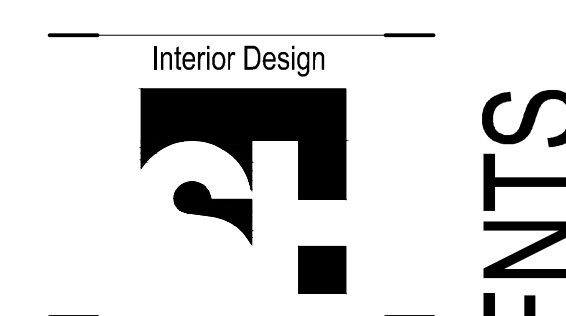
PROPOSED LAYOUT LEGEND

- PROPOSED BUILDING
- HEAVY DUTY ASPHALT PAVEMENT
- LIGHT DUTY ASPHALT PAVEMENT
- CATEGORY E CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- PROPERTY LINE
- EDGE OF NEW PAVEMENT

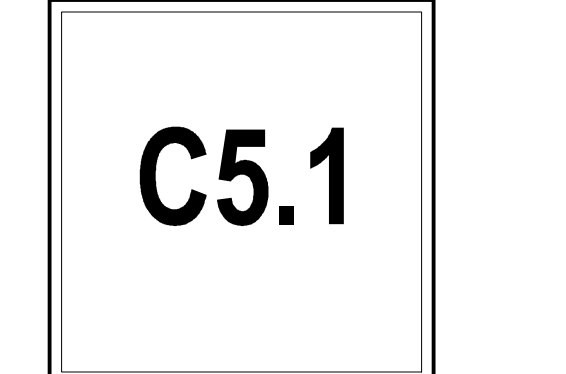
SITE DATA TABLE	
SITE ACREAGE:	23.84 AC
EXISTING ZONING:	(A-2) PARKS, ESTATES, AND AGRICULTURAL DISTRICT
PROPOSED ZONING:	(A-P) ADMINISTRATIVE-PROFESSIONAL DISTRICT
PROPOSED USE:	COMMERCIAL / BEHAVIORAL HEALTH HOSPITAL
PROPOSED BEDS:	96
FUTURE BEDS:	48
BUILDING SETBACKS:	
FRONT YARD	= 391 FT
REAR YARD	= 94 FT
STREET SIDE YARD	= 605 FT
INTERIOR SIDE YARD	= 105 FT
PROPOSED LOT COVERAGE	= 44%
PROPOSED BUILDING:	
AREA	= 71,048 SQ-FT
MAXIMUM HEIGHT	= 50 FT
PROPOSED HEIGHT	= 30 FT
REQUIRED PARKING	
(1.5 SPACES PER BED) X (96 BEDS)	= 144 SPACES
PROVIDED PARKING	= 182 SPACES
OUTPATIENT AREA	= (4,053 SQ-FT) / (34,670 SQ-FT) = 11.69%
REQUIRED DEDICATED PARKING	= (1,169) X (182 SPACES) = 22 SPACES
REQUIRED OUTPATIENT A.D.A.	= (11) X (22 SPACES) = 3 SPACES
INPATIENT DEDICATED PARKING	= 182 SPACES - 22 SPACES = 160 SPACES
REQUIRED INPATIENT A.D.A.	= 6 SPACES
PROVIDED A.D.A.	= 9 SPACES



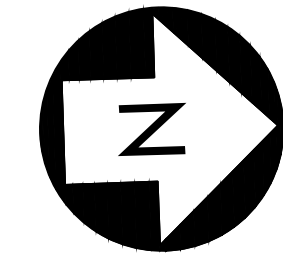
STENGEN HILL  
ARCHITECTURE  
613 WEST MAIN STREET  
LOUISVILLE, KENTUCKY 40202  
502.893.1875  
502.893.1876 fax



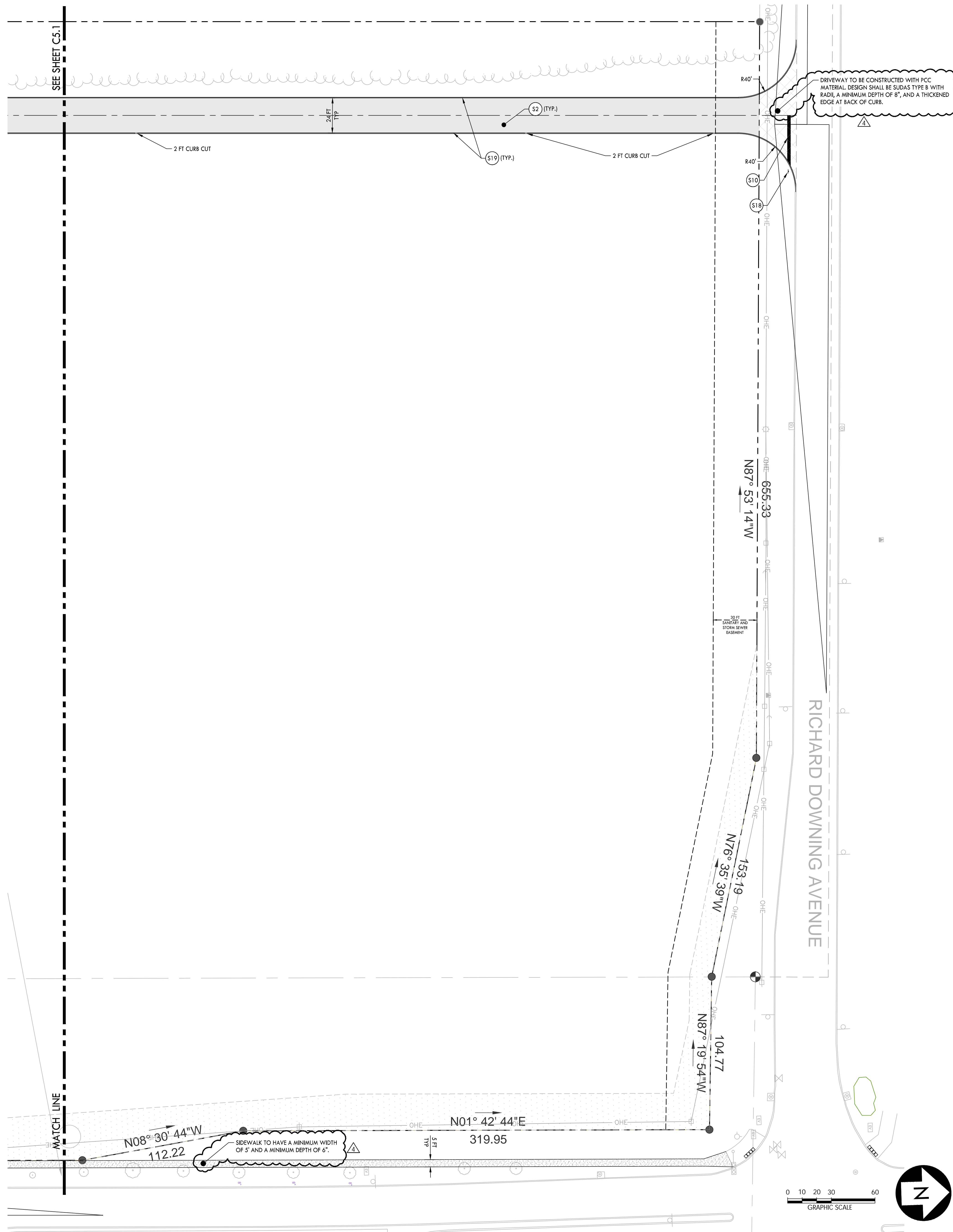
3/29/24 ADDM #4  
5/24/24 ADDM #6  
30 Oct 2023  
AHC2246



CONSTRUCTION DOCUMENTS



C5.1



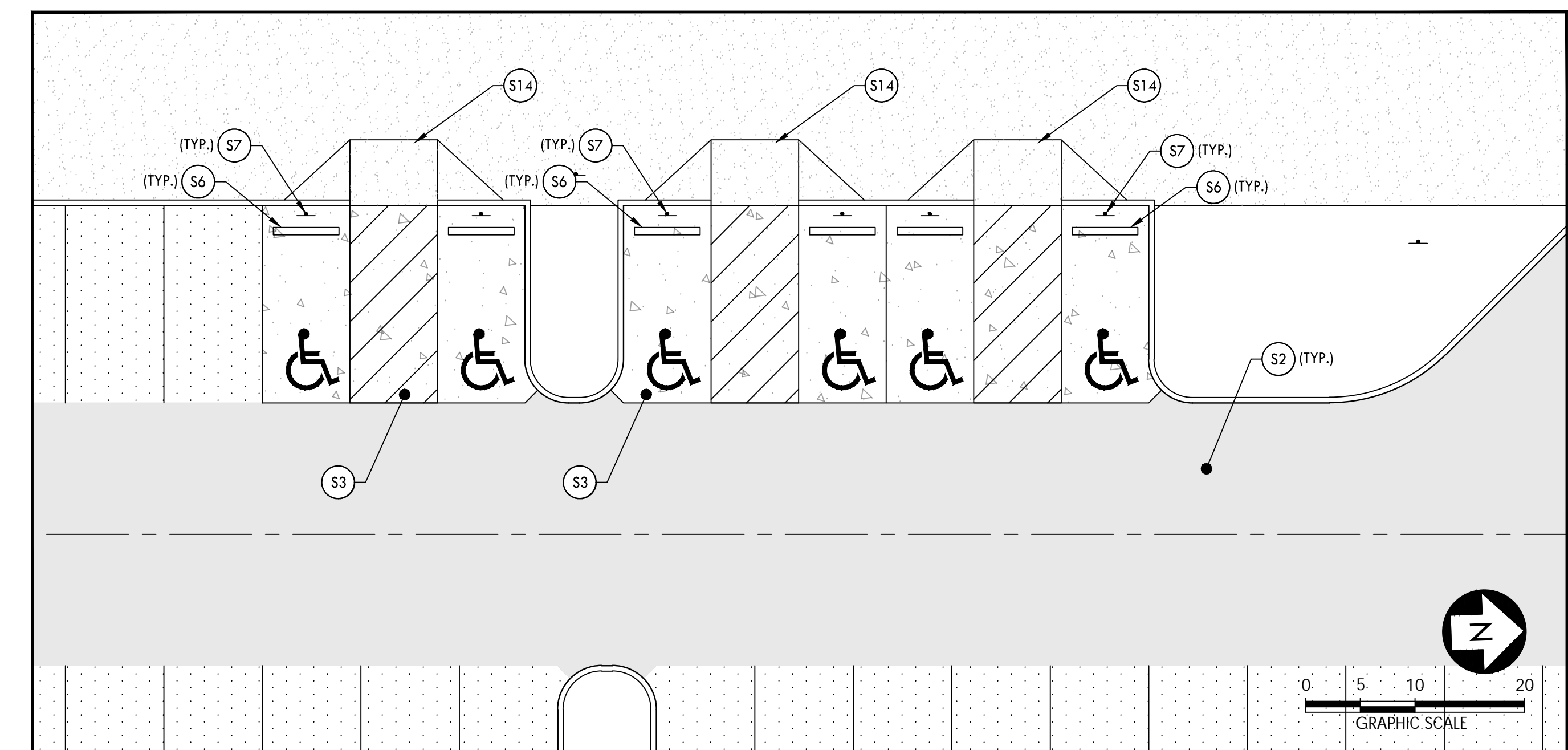
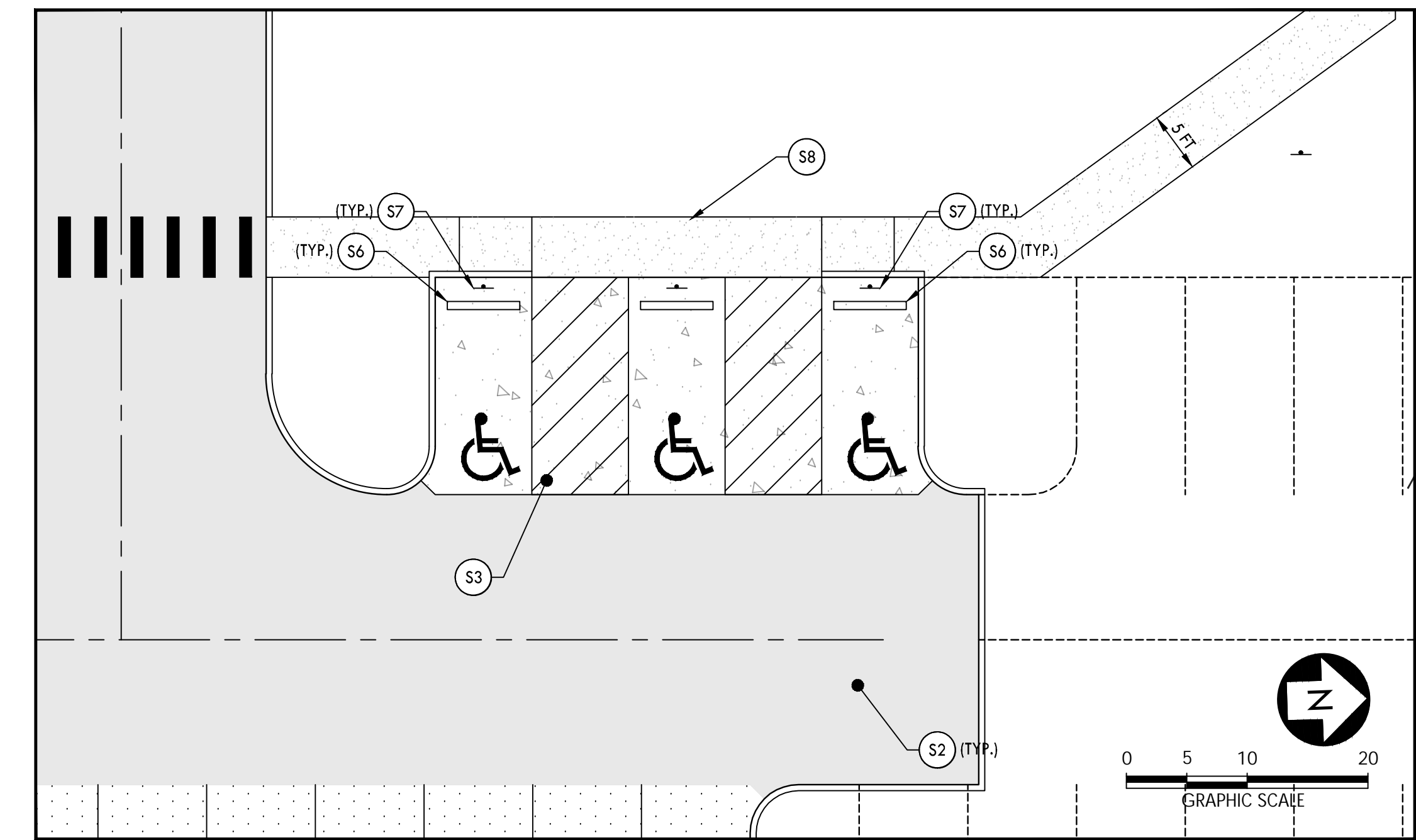
**PROPOSED LAYOUT LEGEND**

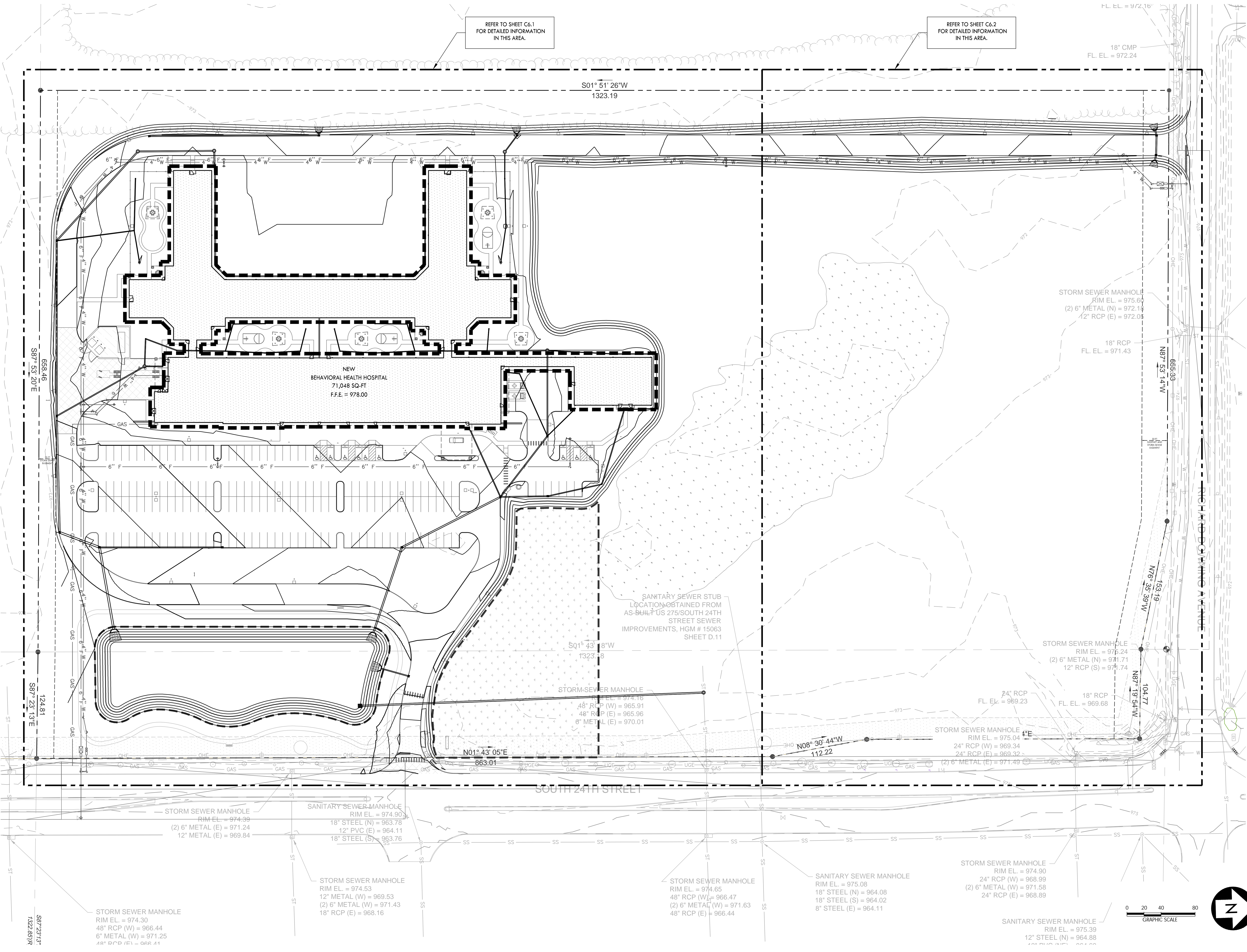
- PROPOSED BUILDING
- HEAVY DUTY ASPHALT PAVEMENT
- LIGHT DUTY ASPHALT PAVEMENT
- CATEGORY E CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- PROPERTY LINE

**LAYOUT PLAN KEYNOTES**

CODE	DESCRIPTION	DETAIL LOCATION
S1	ASPHALT PAVEMENT LIGHT DUTY	C8.0 - 1
S2	ASPHALT PAVEMENT HEAVY DUTY	C8.0 - 1
S3	LIGHT DUTY CONCRETE PAVEMENT	C8.0 - 1
S4	HEAVY DUTY CONCRETE PAVEMENT	C8.0 - 1
S5	CATEGORY E CONCRETE PAVEMENT	C8.0 - 1
S6	CONCRETE WHEEL STOP	C8.0 - 4
S7	ACCESSIBLE PARKING SIGN	C8.0 - 5
S8	ACCESSIBLE RAMP - ADA	C8.0 - 6
S9	PEDESTRIAN CROSSWALK	C8.0 - 7
S10	24" PAINTED STOP BAR	C8.0 - 8
S11	DIRECTIONAL ARROW	C8.0 - 9
S12	ACCESSIBLE RAMP - TYPE A	C8.3 - 1
S13	ACCESSIBLE RAMP - TYPE B	C8.3 - 2
S14	ACCESSIBLE RAMP - TYPE C	C8.3 - 3
S15	CONCRETE BOLLARD	-
S16	BIKE RACK	C8.3 - 5
S17	MULCH PATH	-
S18	STOP SIGN	-
S19	POST CURB	C8.0 - 2
S20	CONCRETE SIDEWALK	C8.0 - 3

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.





REFER TO SHEET C6.1 FOR DETAILED INFORMATION IN THIS AREA.

REFER TO SHEET C6.2 FOR DETAILED INFORMATION IN THIS AREA.

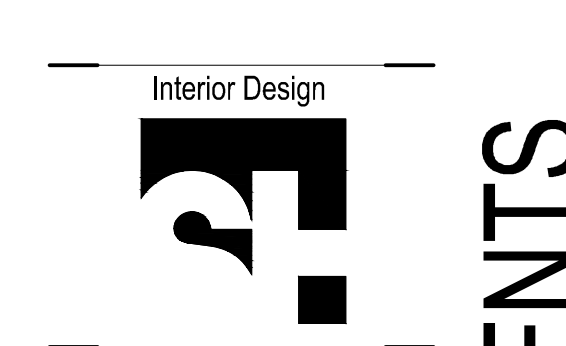


**STENGEN HILL ARCHITECTURE**  
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 502.893.1876 fax

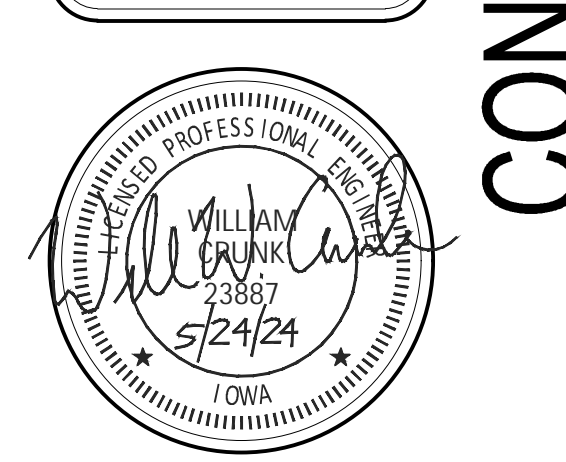
Civil Engineering  
**CRUNK ENGINEERING**  
 Structural Engineering

**SKYHOOK**  
 STRUCTURAL ENGINEERING, P.C.

Mechanical/Electrical Engineering  
**CMTA**



**ACADIA HEALTHCARE**

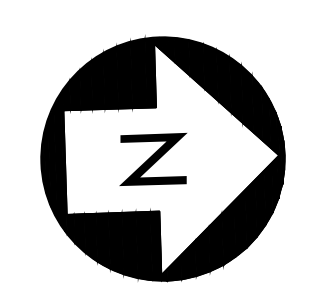


**OVERALL GRADING & DRAINAGE PLAN**  
 NEW BEHAVIORAL HEALTH HOSPITAL  
 HEALTHCARE COMPANY, INC.  
 COUNCIL BLUFFS, IOWA

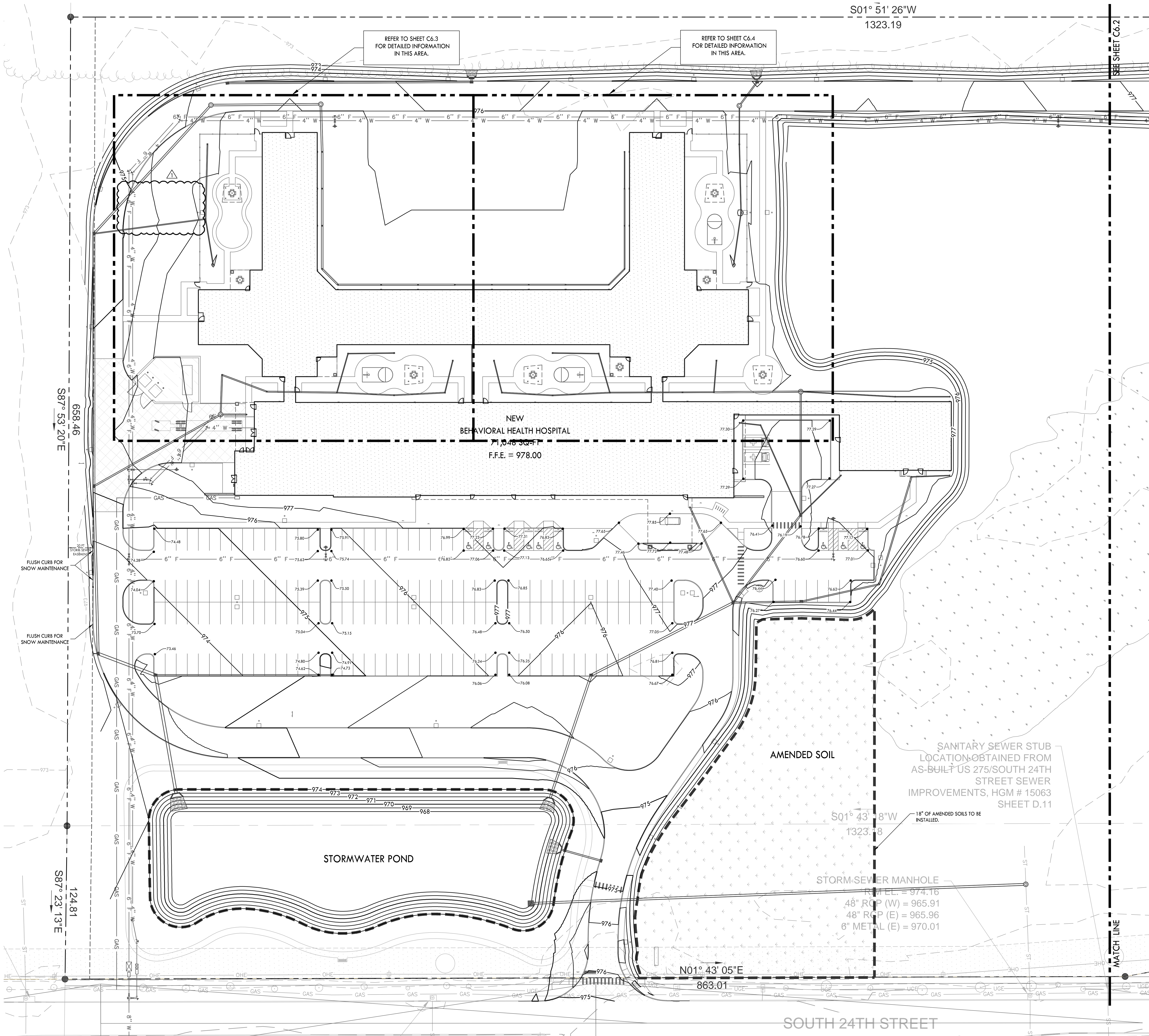
3/29/24 ADDM #4  
 5/24/24 ADDM #6  
 30 Oct 2023  
 AHC2246

**C6.0**

CONSTRUCTION DOCUMENTS



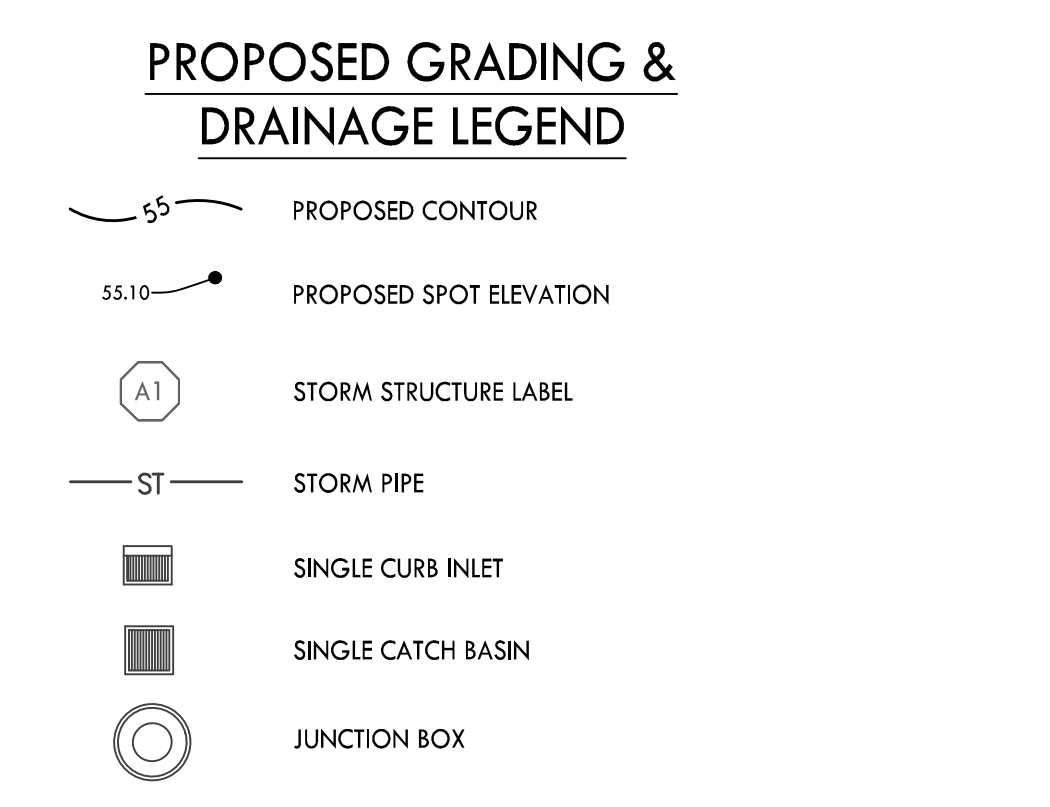
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### GRADING & DRAINAGE PLAN KEYNOTES

CODE	DESCRIPTION	DETAIL LOCATION
G1	SINGLE CURB INLET	C8.1 - 5
G3	PRECAST CONCRETE MANHOLE	C8.1 - 4
G4	STORM SEWER CLEANOUT	C8.1 - 2
G5	NYLOPLAST DRAIN	C8.2 - 1
G6	CONCRETE HEADWALL	C8.1 - 6, C8.1 - 7
G7	RIP-RAP OUTLET PROTECTION	C8.1 - 8

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.



**STENGEL HILL ARCHITECTURE**  
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 502.893.1875  
 502.893.1876 fax

Civil Engineering  
**CRUNK ENGINEERING**  
 Structural Engineering

**SKYHOOK**  
 STRUCTURAL ENGINEERING, P. E.  
 Mechanical/Electrical Engineering

**CMTA**

Interior Design

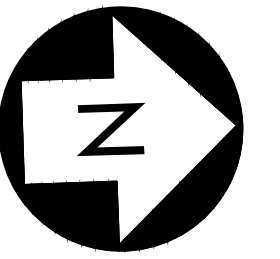
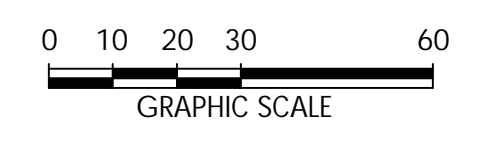
**ACADIA HEALTHCARE**

Professional Engineer Seal: WILLIAM CRUNK, No. 52424, State of Iowa

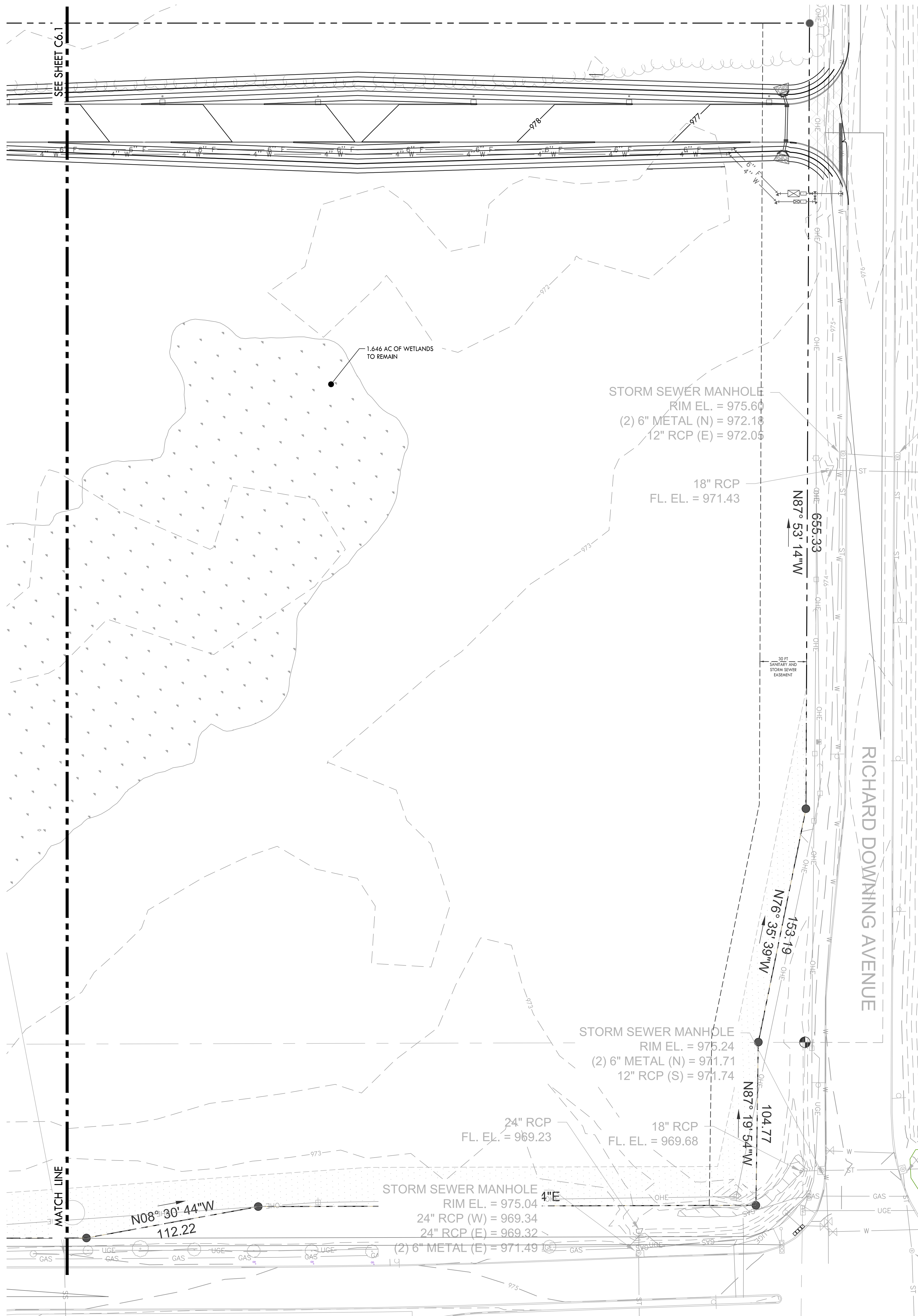
GRADING PLAN  
 NEW BEHAVIORAL HEALTH HOSPITAL  
 HEALTHCARE COMPANY, INC.  
 COUNCIL BLUFFS, IOWA

3/29/24 ADDM #4  
 5/24/24 ADDM #6  
 30 Oct 2023  
 AHC2246

**C6.1**



CONSTRUCTION DOCUMENTS



### GRADING & DRAINAGE PLAN KEYNOTES

CODE	DESCRIPTION	DETAIL LOCATION
G1	SINGLE CURB INLET	C8.1 - 5
G3	PRECAST CONCRETE MANHOLE	C8.1 - 4
G4	STORM SEWER CLEANOUT	C8.1 - 2
G5	NYLOPLAST DRAIN	C8.2 - 1
G6	CONCRETE HEADWALL	C8.1 - 6, C8.1 - 7
G7	RIP-RAP OUTLET PROTECTION	C8.1 - 8

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

#### PROPOSED GRADING & DRAINAGE LEGEND

- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- STORM STRUCTURE LABEL
- STORM PIPE
- SINGLE CURB INLET
- SINGLE CATCH BASIN
- JUNCTION BOX

**STENGEN HILL  
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Civil Engineering  
  
**CRUNK  
ENGINEERING**  
Structural Engineering

**SKYHOOK**  
STRUCTURAL ENGINEERING, P.C.  
Mechanical/Electrical Engineering

**CMTA**

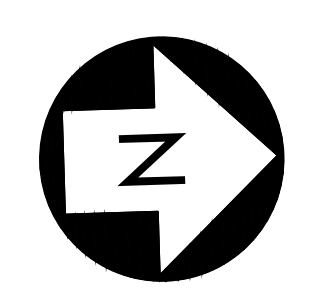
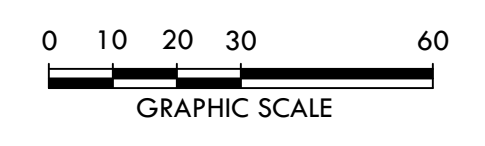
Interior Design

**ACADIA**  
HEALTHCARE

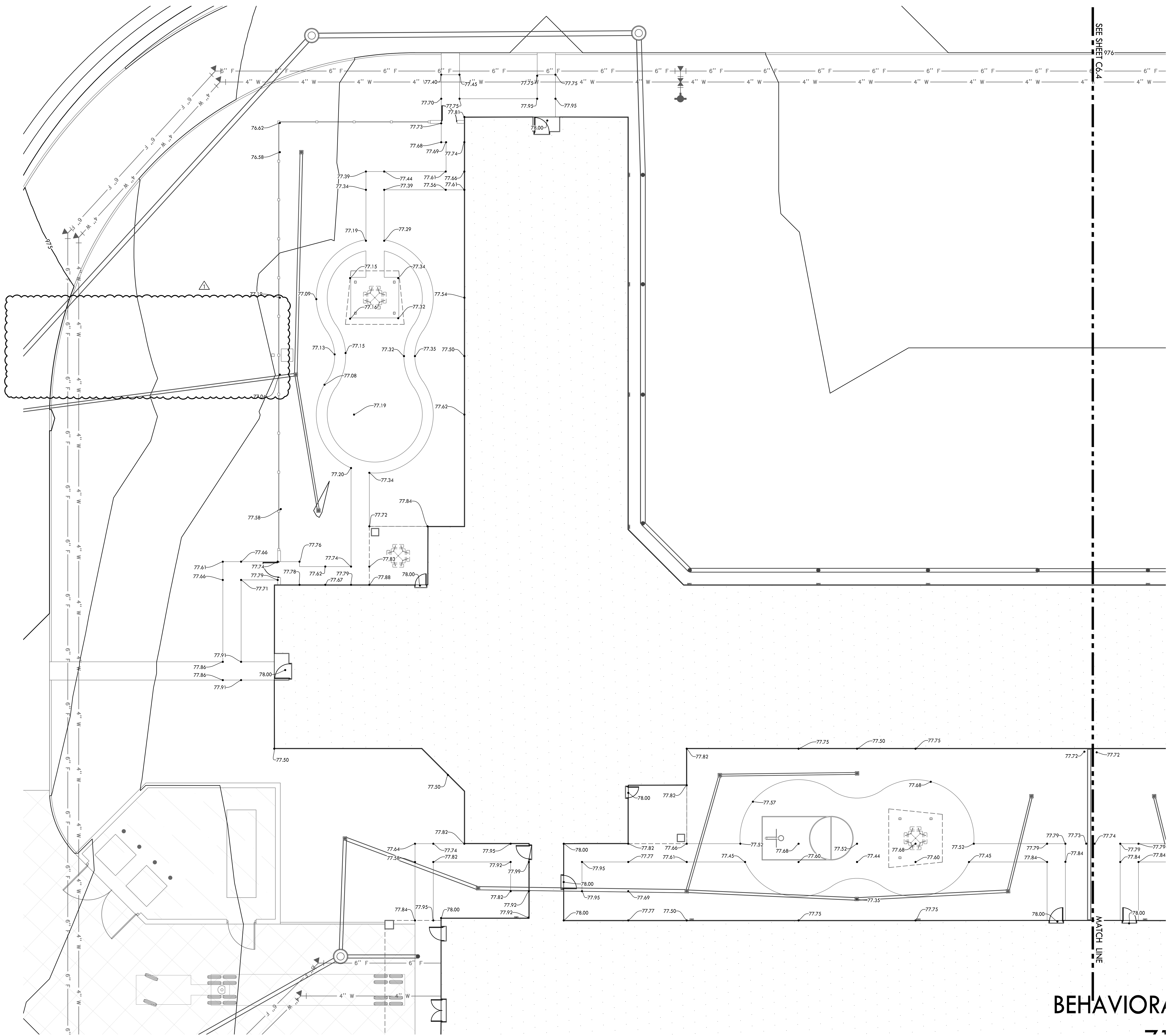
GRADING PLAN  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA

XX/XX/24 REVISION 1  
30 Oct 2023  
AHC2246

**C6.2**



CONSTRUCTION DOCUMENTS



### GRADING & DRAINAGE PLAN KEYNOTES

CODE	DESCRIPTION	DETAIL LOCATION
G1	SINGLE CURB INLET	C8.1 - 5
G3	PRECAST CONCRETE MANHOLE	C8.1 - 4
G4	STORM SEWER CLEANOUT	C8.1 - 2
G5	NYLOPLAST DRAIN	C8.2 - 1
G6	CONCRETE HEADWALL	C8.1 - 6, C8.1 - 7
G7	RIP-RAP OUTLET PROTECTION	C8.1 - 8

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

#### PROPOSED GRADING & DRAINAGE LEGEND

- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- STORM STRUCTURE LABEL
- STORM PIPE
- SINGLE CURB INLET
- SINGLE CATCH BASIN
- JUNCTION BOX

**STENGEN HILL  
ARCHITECTURE**  
613 WEST MAIN STREET  
LOUISVILLE, KENTUCKY 40202  
502.893.1875  
502.893.1876 fax

Civil Engineering  
  
**CRUNK  
ENGINEERING**  
Structural Engineering

**SKYHOOK**  
STRUCTURAL ENGINEERING, P.C.  
Mechanical/Electrical Engineering

**CMTA**

Interior Design

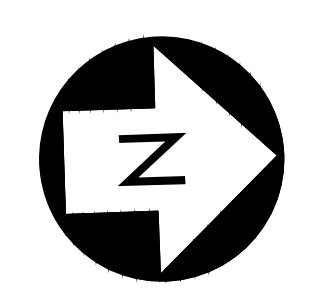
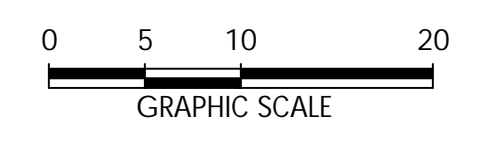
**ACADIA  
HEALTHCARE**

COURTYARD GRADING PLAN  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA

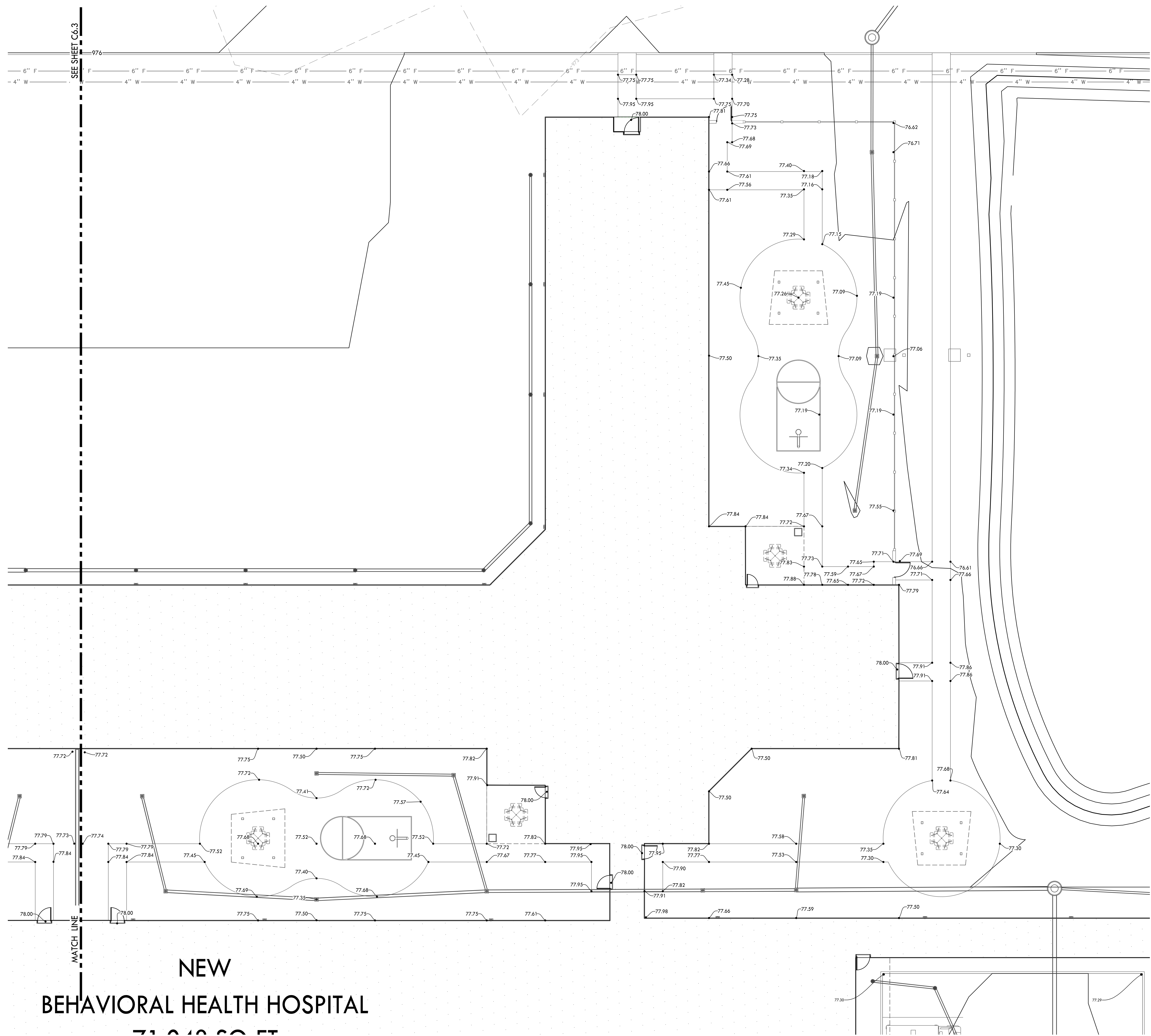
3/29/24 ADDM #4  
5/24/24 ADDM #6  
30 Oct 2023  
AHC2246

C6.3

BEHAVIORAL



CONSTRUCTION DOCUMENTS



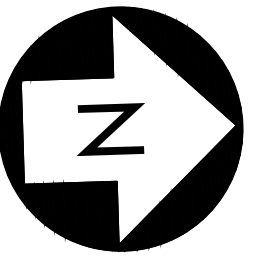
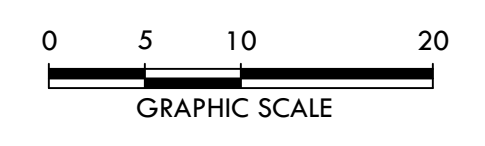
GRADING & DRAINAGE PLAN KEYNOTES		
CODE	DESCRIPTION	DETAIL LOCATION
G1	SINGLE CURB INLET	C8.1 - 5
G3	PRECAST CONCRETE MANHOLE	C8.1 - 4
G4	STORM SEWER CLEANOUT	C8.1 - 2
G5	NYLOPLAST DRAIN	C8.2 - 1
G6	CONCRETE HEADWALL	C8.1 - 6, C8.1 - 7
G7	RIP-RAP OUTLET PROTECTION	C8.1 - 8

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

**PROPOSED GRADING & DRAINAGE LEGEND**

- 55 — PROPOSED CONTOUR
- 55.10 — PROPOSED SPOT ELEVATION
- (A1) — STORM STRUCTURE LABEL
- ST — STORM PIPE
- — SINGLE CURB INLET
- — SINGLE CATCH BASIN
- — JUNCTION BOX

**NEW  
BEHAVIORAL HEALTH HOSPITAL**  
71,040 SQ. FT.



**STENDEL HILL ARCHITECTURE**  
613 WEST MAIN STREET  
LOUISVILLE, KENTUCKY 40202  
502.893.1875  
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Civil Engineering  
**CRUNK ENGINEERING**  
Structural Engineering

**SKYHOOK**  
STRUCTURAL ENGINEERING, P.C.  
Mechanical/Electrical Engineering

**CMTA**

Interior Design  
**ACADIA HEALTHCARE**

**ACADIA HEALTHCARE**



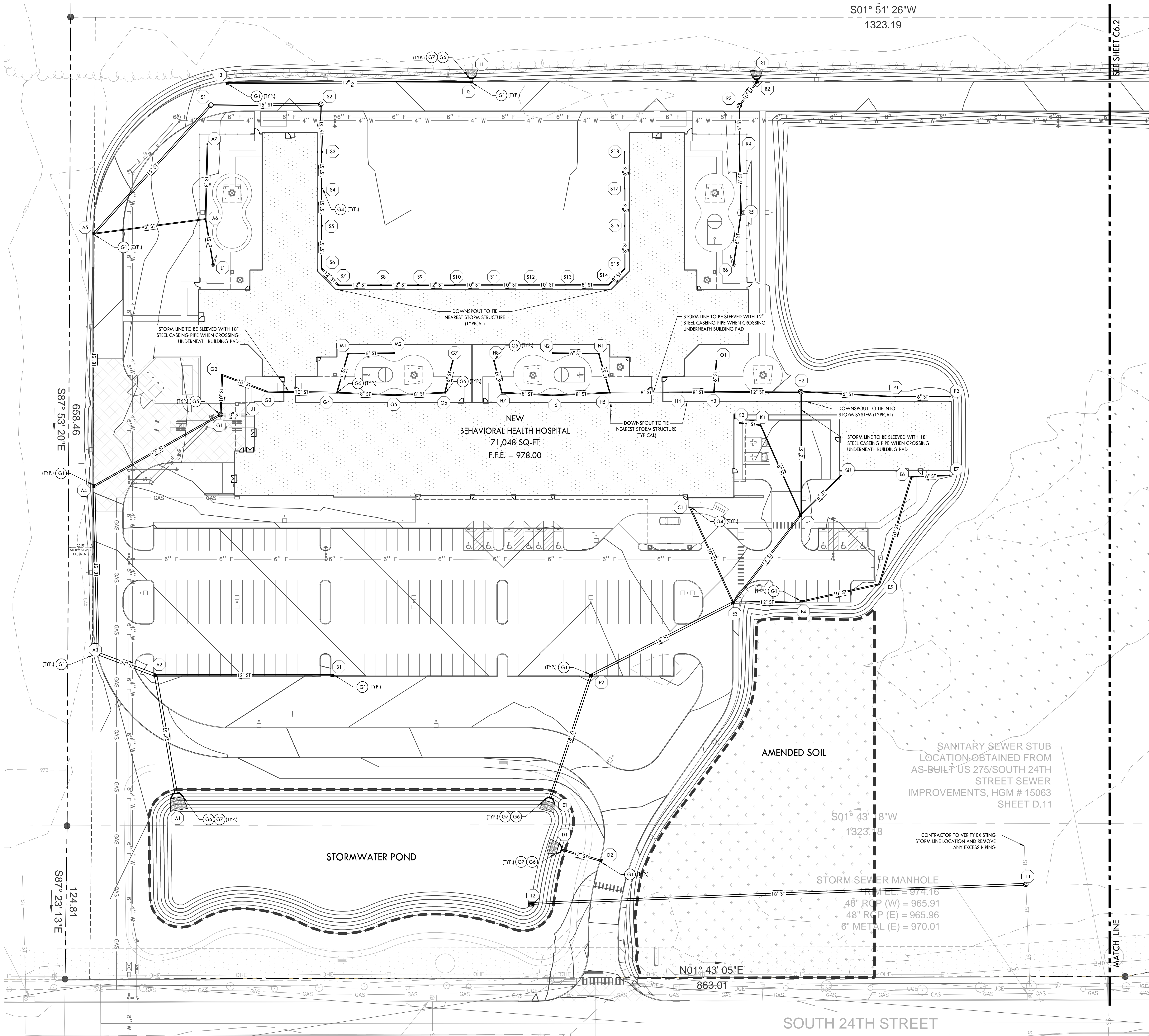
COURTYARD GRADING PLAN  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA

XX/XX/24 REVISION 1  
30 Oct 2023  
AHC2246

**C6.4**

**CONSTRUCTION DOCUMENTS**





S01° 51' 26"W  
1323.19

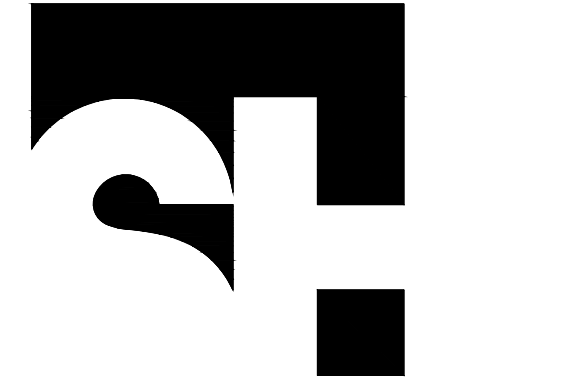
**GRADING & DRAINAGE PLAN  
KEYNOTES**

CODE	DESCRIPTION	DETAIL LOCATION
G1	SINGLE CURB INLET	C8.1 - 5
G3	PRECAST CONCRETE MANHOLE	C8.1 - 4
G4	STORM SEWER CLEANOUT	C8.1 - 2
G5	NYLOPLAST DRAIN	C8.2 - 1
G6	CONCRETE HEADWALL	C8.1 - 6, C8.1 - 7
G7	RIP-RAP OUTLET PROTECTION	C8.1 - 8

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

**PROPOSED GRADING &  
DRAINAGE LEGEND**

- 5.5 — PROPOSED CONTOUR
- 55.10 — PROPOSED SPOT ELEVATION
- (A1) — STORM STRUCTURE LABEL
- ST — STORM PIPE
- — SINGLE CURB INLET
- — SINGLE CATCH BASIN
- — JUNCTION BOX



**STENGEN HILL  
ARCHITECTURE**  
613 WEST MAIN STREET  
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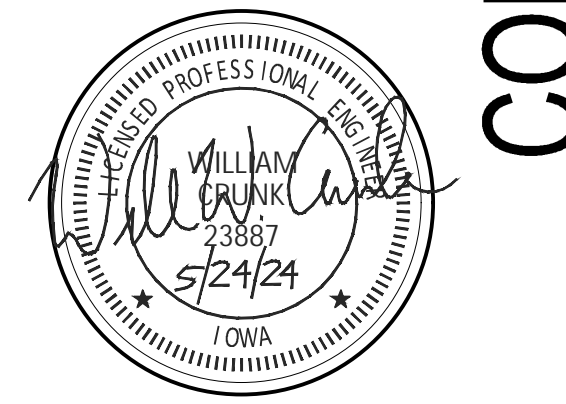
Civil Engineering  
**CRUNK**  
ENGINEERING  
Structural Engineering

**SKYHOOK**  
STRUCTURAL ENGINEERING, P.C.  
Mechanical/Electrical Engineering

**CMTA**

Interior Design  
**ACADIA**  
HEALTHCARE

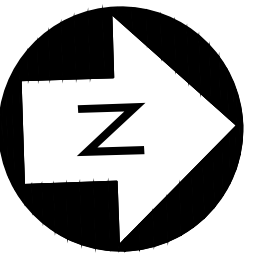
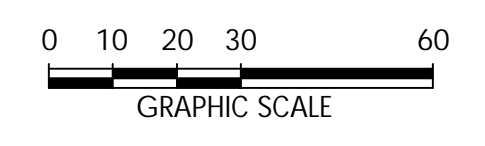
**ACADIA**  
HEALTHCARE



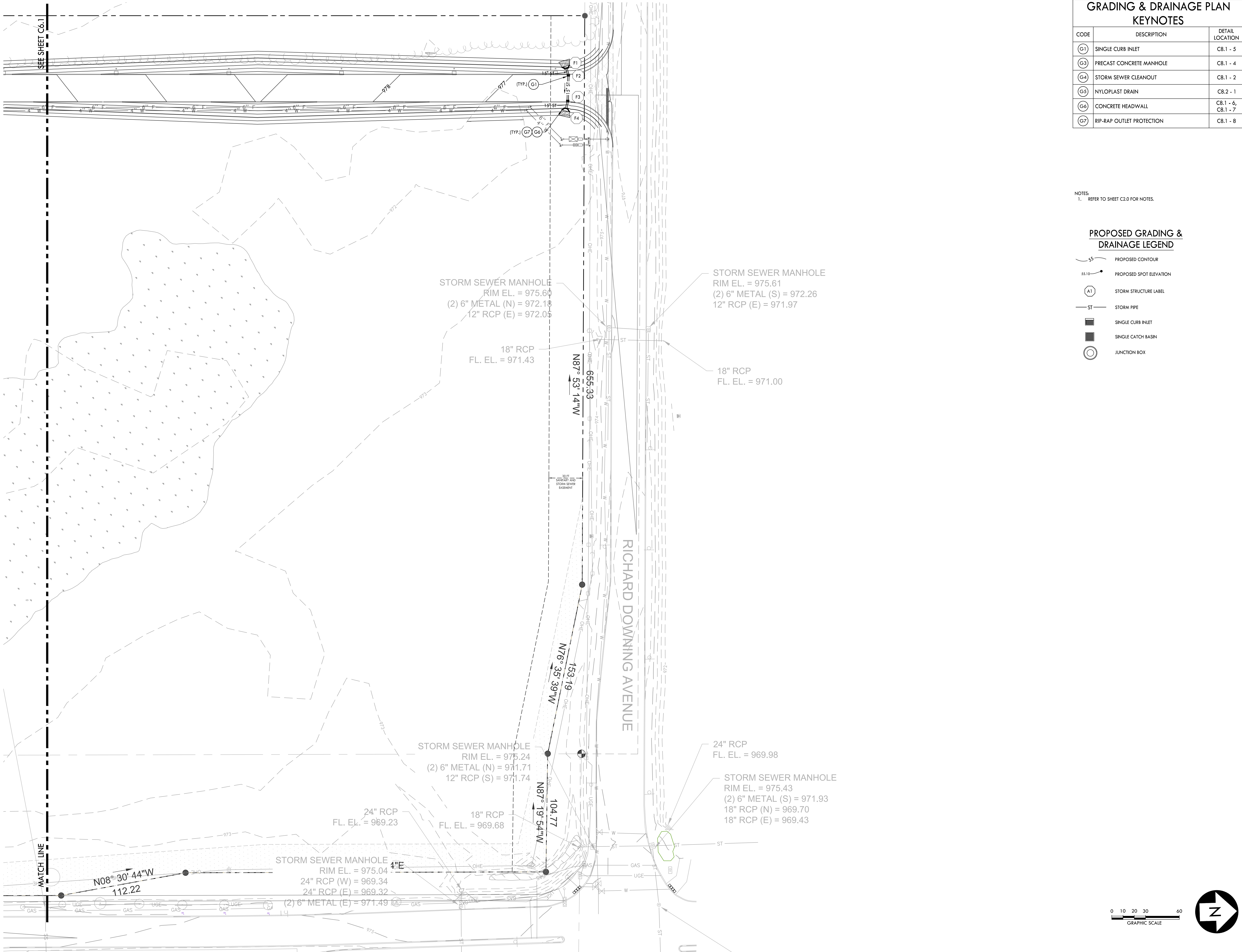
**DRAINAGE PLAN**  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA

3/29/24 ADDM #4  
5/24/24 ADDM #6  
30 Oct 2023  
AHC2246

**C6.5**



CONSTRUCTION DOCUMENTS



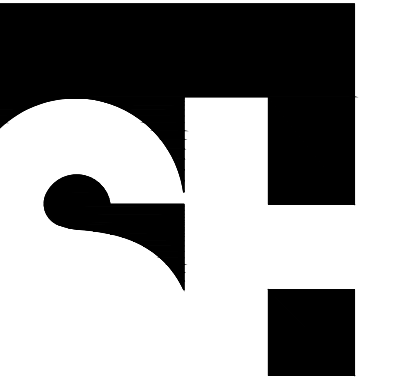
### GRADING & DRAINAGE PLAN KEYNOTES

CODE	DESCRIPTION	DETAIL LOCATION
G1	SINGLE CURB INLET	C8.1 - 5
G3	PRECAST CONCRETE MANHOLE	C8.1 - 4
G4	STORM SEWER CLEANOUT	C8.1 - 2
G5	NYLOPLAST DRAIN	C8.2 - 1
G6	CONCRETE HEADWALL	C8.1 - 6, C8.1 - 7
G7	RII-RAP OUTLET PROTECTION	C8.1 - 8

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.

### PROPOSED GRADING & DRAINAGE LEGEND

- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- STORM STRUCTURE LABEL
- STORM PIPE
- SINGLE CURB INLET
- SINGLE CATCH BASIN
- JUNCTION BOX



STENGE HILL  
ARCHITECTURE

613 WEST MAIN STREET  
LOUISVILLE, KENTUCKY 40202  
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502.893.1876 fax

Civil Engineering



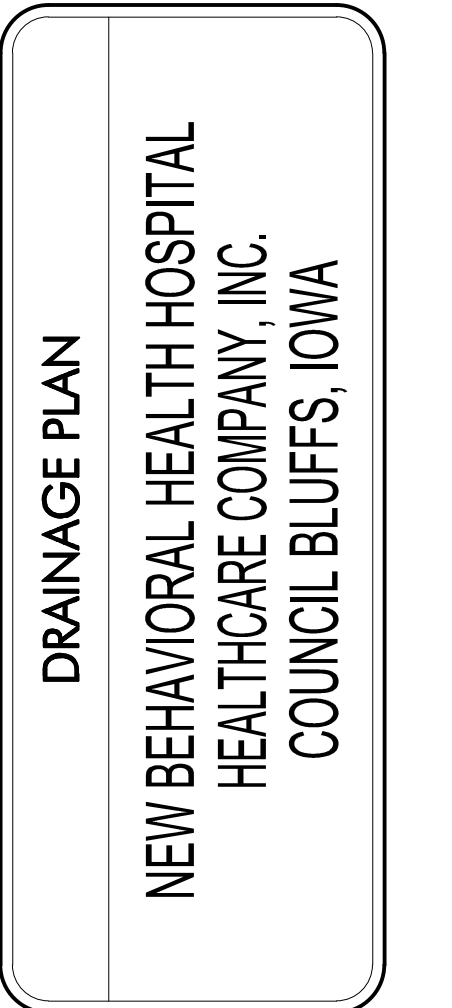
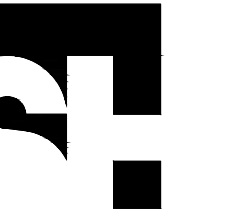
Structural Engineering



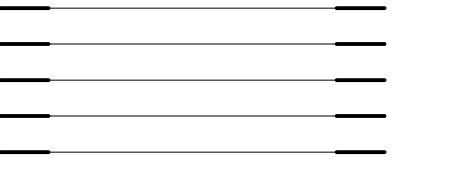
Mechanical/Electrical Engineering



Interior Design



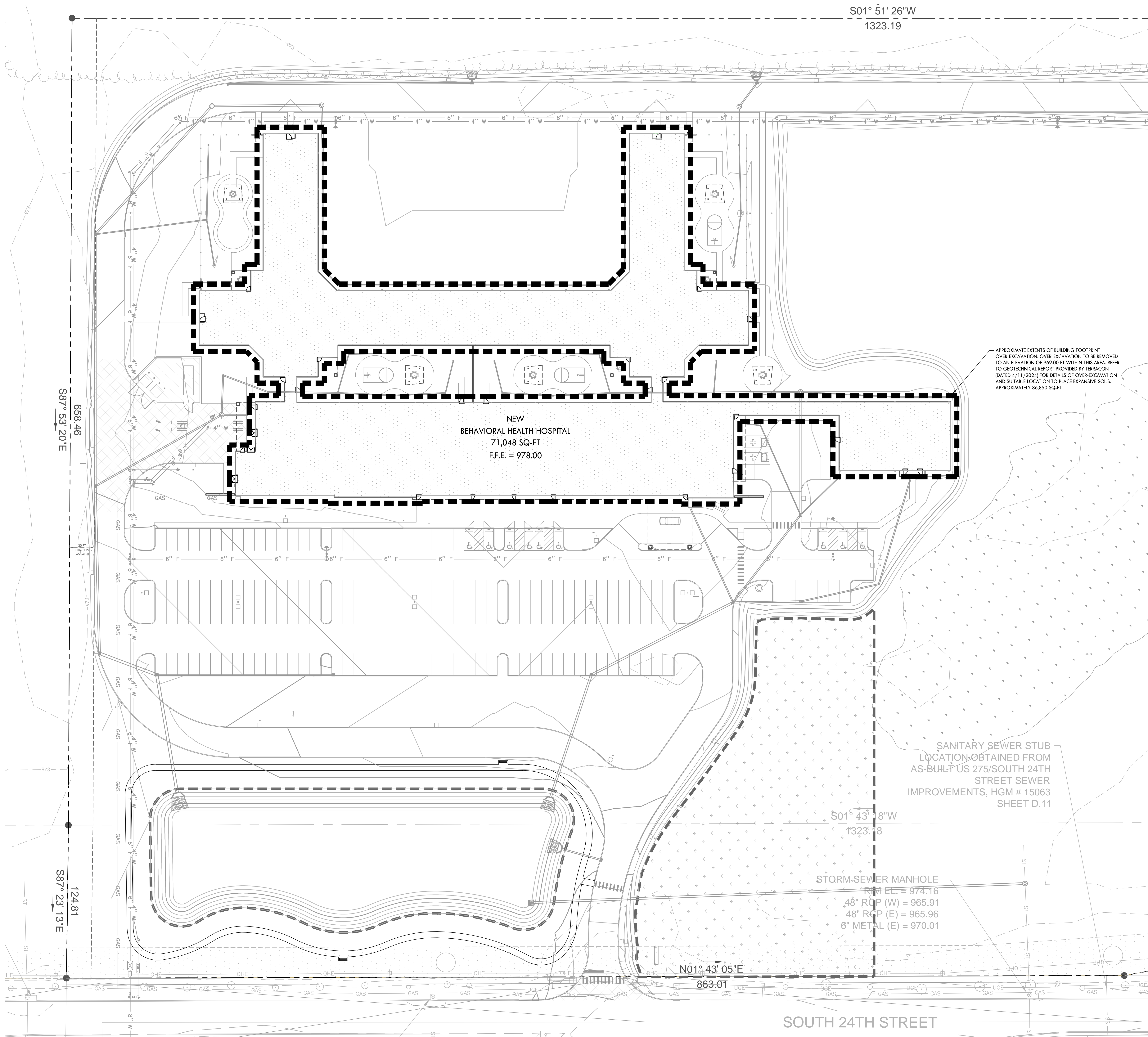
XX/XX/24 REVISION 1



30 Oct 2023  
AHC2246



CONSTRUCTION DOCUMENTS



S01° 51' 26"W  
1323.19

658.46  
S87° 53' 20"E

124.81  
S87° 23' 13"E

NEW  
BEHAVIORAL HEALTH HOSPITAL  
71,048 SQ-FT  
F.F.E. = 978.00

APPROXIMATE EXTENTS OF BUILDING FOOTPRINT  
OVER-EXCAVATION. OVER-EXCAVATION TO BE REMOVED  
TO AN ELEVATION OF 969.00 FT WITHIN THIS AREA. REFER  
TO GEOTECHNICAL REPORT PROVIDED BY TERRACON  
(DATED 4/11/2024) FOR DETAILS OF OVER-EXCAVATION  
AND SUITABLE LOCATION TO PLACE EXPANSIVE SOILS.  
APPROXIMATELY 86,850 SQ-FT

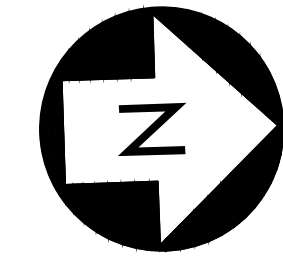
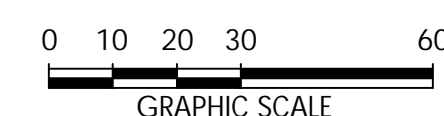
SANITARY SEWER STUB  
LOCATION OBTAINED FROM  
AS-BUILT US 275/SOUTH 24TH  
STREET SEWER  
IMPROVEMENTS, HGM # 15063  
SHEET D.11

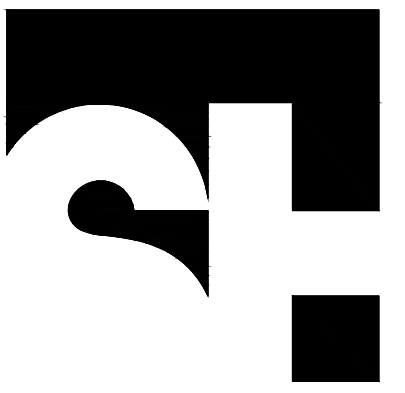
S01° 43' 18"W  
1323.78

STORM SEWER MANHOLE  
RIM EL. = 974.16  
48" RCP (W) = 965.91  
48" RCP (E) = 965.96  
6" METAL (E) = 970.01

N01° 43' 05"E  
863.01

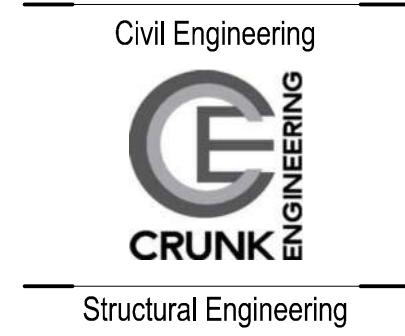
SOUTH 24TH STREET



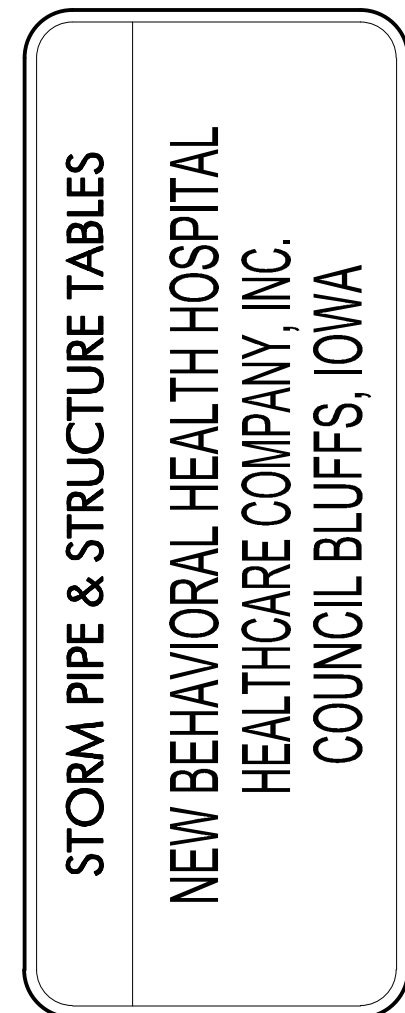
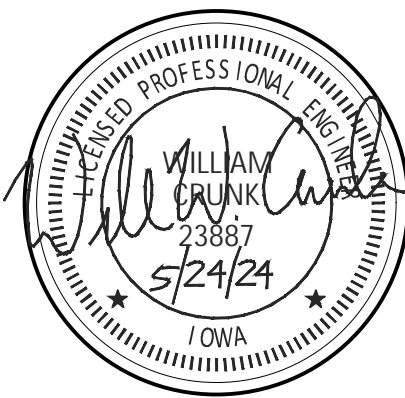
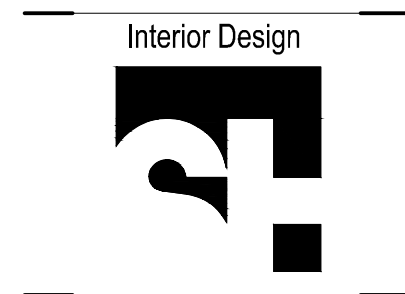


STENGEL HILL ARCHITECTURE

613 WEST MAIN STREET  
LOUISVILLE, KENTUCKY 40202  
502.893.1875  
502.893.1876 fax

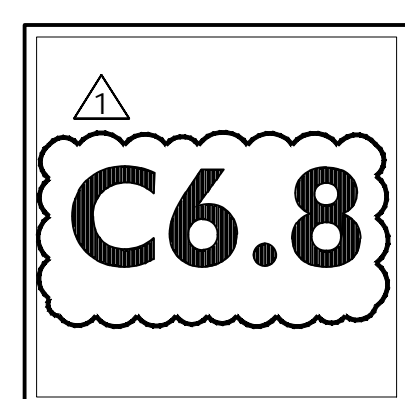


Mechanical/Electrical Engineering



3/29/24 ADDM #14  
5/24/24 ADDM #6

30 Oct 2023  
AHC2246

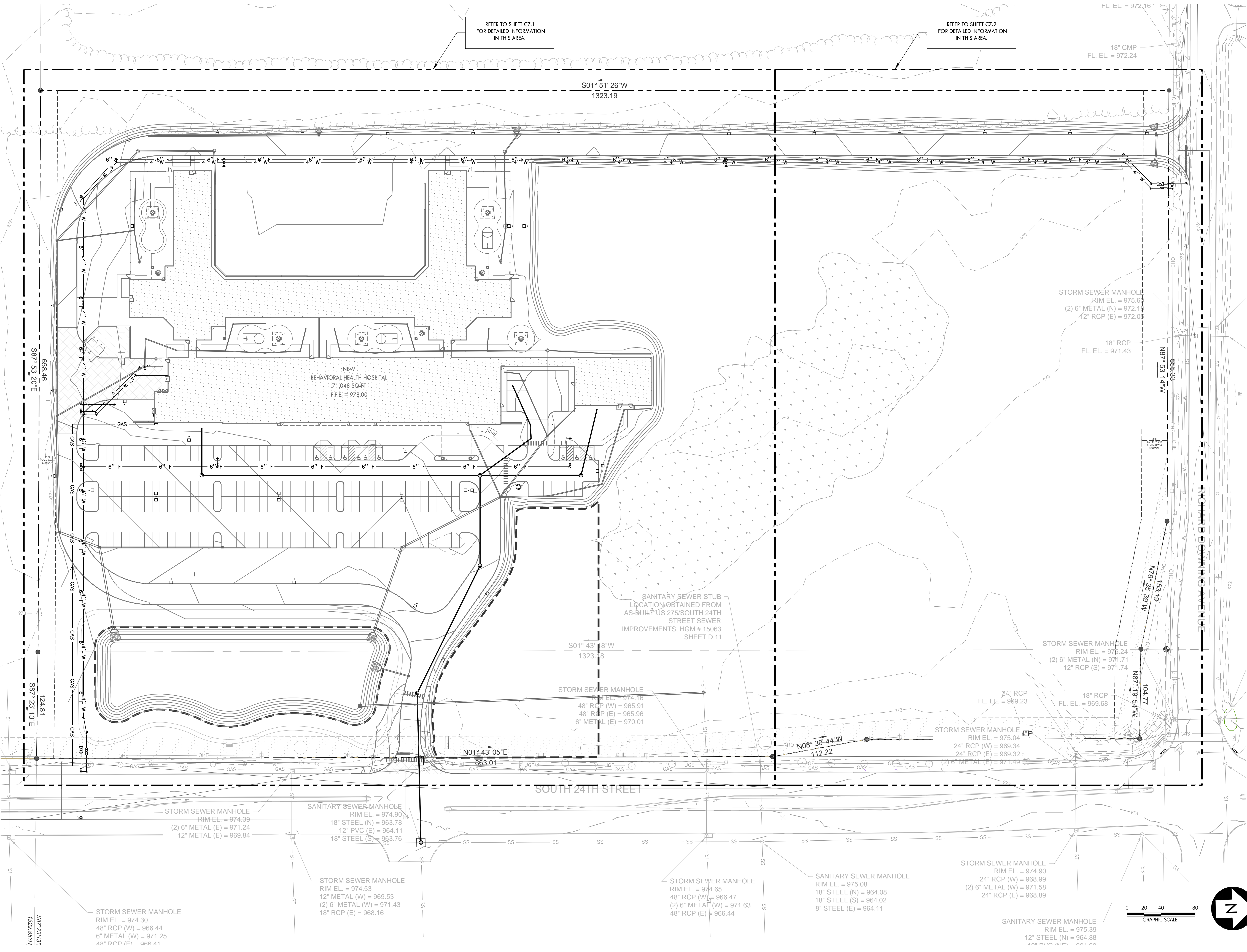


CONSTRUCTION DOCUMENTS

Table with columns: ID, RIM, INVERT, TYPE. Contains storm structure data for various pipe sizes and materials like concrete headwalls and curbs.

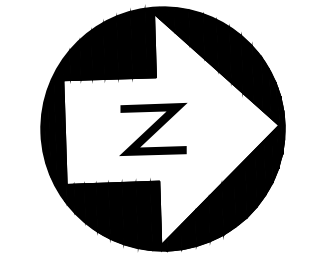
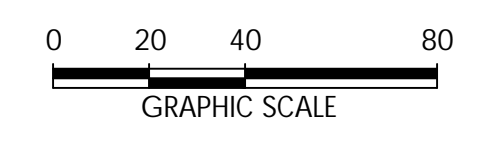
Table with columns: ID, RIM, INVERT, TYPE. Continuation of storm structure data.

Table with columns: INLET, INVERT, OUTLET, INVERT, LENGTH (FT), SLOPE (%), SHAPE, DIAMETER (IN), MATERIAL. Contains storm pipe data for various pipe sizes and materials.



REFER TO SHEET C7.1 FOR DETAILED INFORMATION IN THIS AREA.

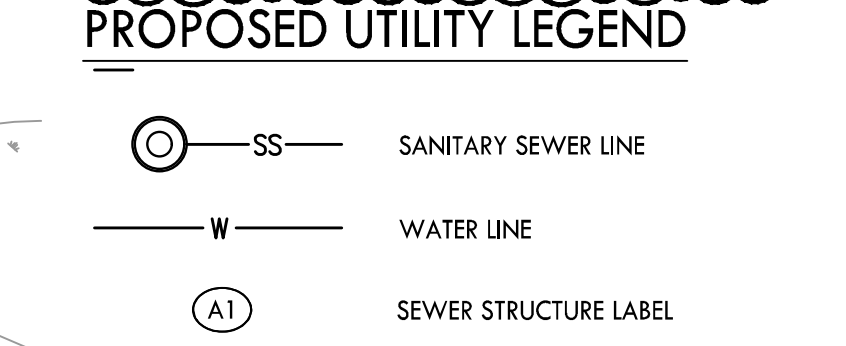
REFER TO SHEET C7.2 FOR DETAILED INFORMATION IN THIS AREA.



S01° 51' 26"W  
1323.19

UTILITY PLAN KEYNOTES		
CODE	DESCRIPTION	DETAIL LOCATION
U1	SANITARY SEWER LINE - SEE PLAN FOR SIZE	-
U2	SANITARY SEWER MANHOLE	C8.1 - 3
U3	SANITARY SEWER CLEANOUT	C8.1 - 1
U4	WATER LINE - SEE PLAN FOR SIZE	C8.2 - 5
U5	FIRE LINE - SEE PLAN FOR SIZE	C8.2 - 5
U6	GATE VALVE	C8.0 - 11
U7	WATER METER - SEE PLAN FOR SIZE	C8.2 - 2, C8.2 - 3
U8	POST INDICATOR VALVE	C8.2 - 4
U9	REDUCE PRESSURE BACKFLOW PREVENTER - SEE PLAN FOR SIZE	-
U10	THRUST BLOCK	C8.0 - 10
U11	TEE - SEE PLAN FOR SIZE	-
U12	FIRE DEPARTMENT CONNECTION	-
U13	FIRE HYDRANT ASSEMBLY	C8.1 - 9
U14	GAS LINE	-
U15	GAS METER	-

NOTES:  
1. REFER TO SHEET C2.0 FOR NOTES.  
2. REFER TO SHEET C7.2 FOR SANITARY PIPE AND STRUCTURE TABLES.  
3. WATER AND FIRE LINE TO BE DIP FROM MAIN TO BACKFLOW PREVENTOR - ANY LINES FROM BACKFLOW TO BUILDING SHALL BE PVC.  
4. PRIVATE HYDRANTS TO BE FLOW TESTED WITH THE BARRELS PAINTED RED AND BONNETS PAINTED PER NFPA 291.



**STENGEL HILL ARCHITECTURE**  
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Civil Engineering  
**CRUNK ENGINEERING**  
Structural Engineering

**SKYHOOK**  
STRUCTURAL ENGINEERING, P.E.  
Mechanical/Electrical Engineering

**CMTA**  
Interior Design

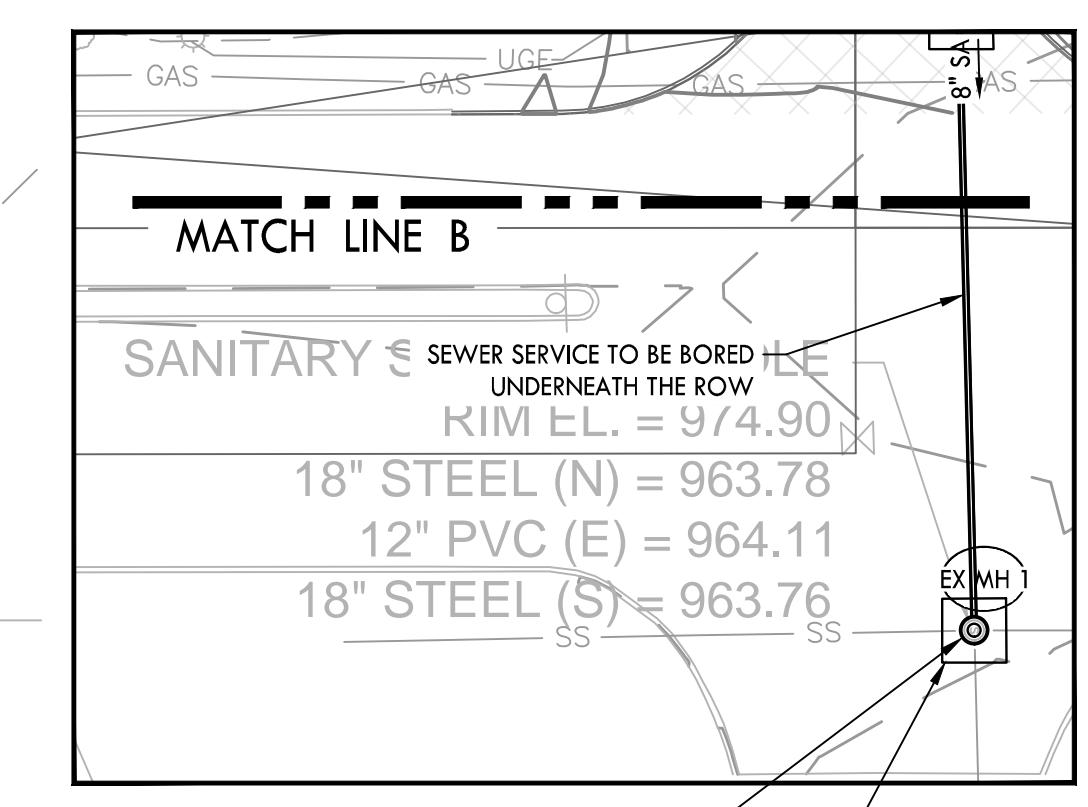
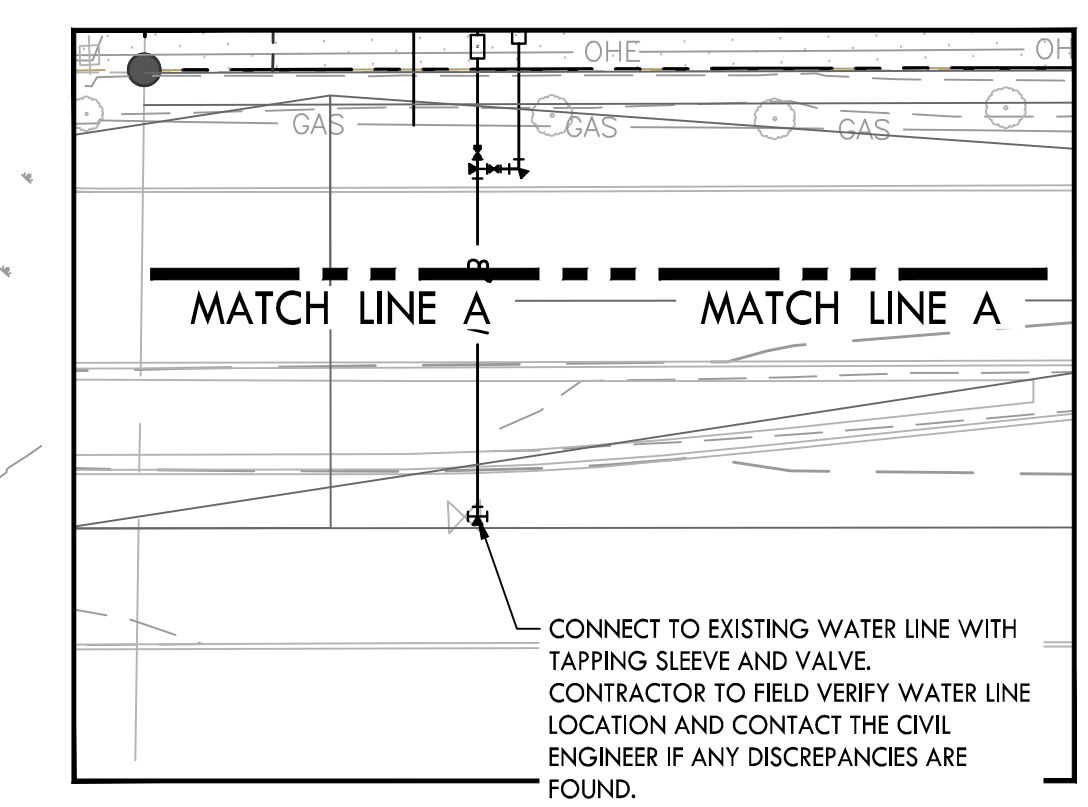
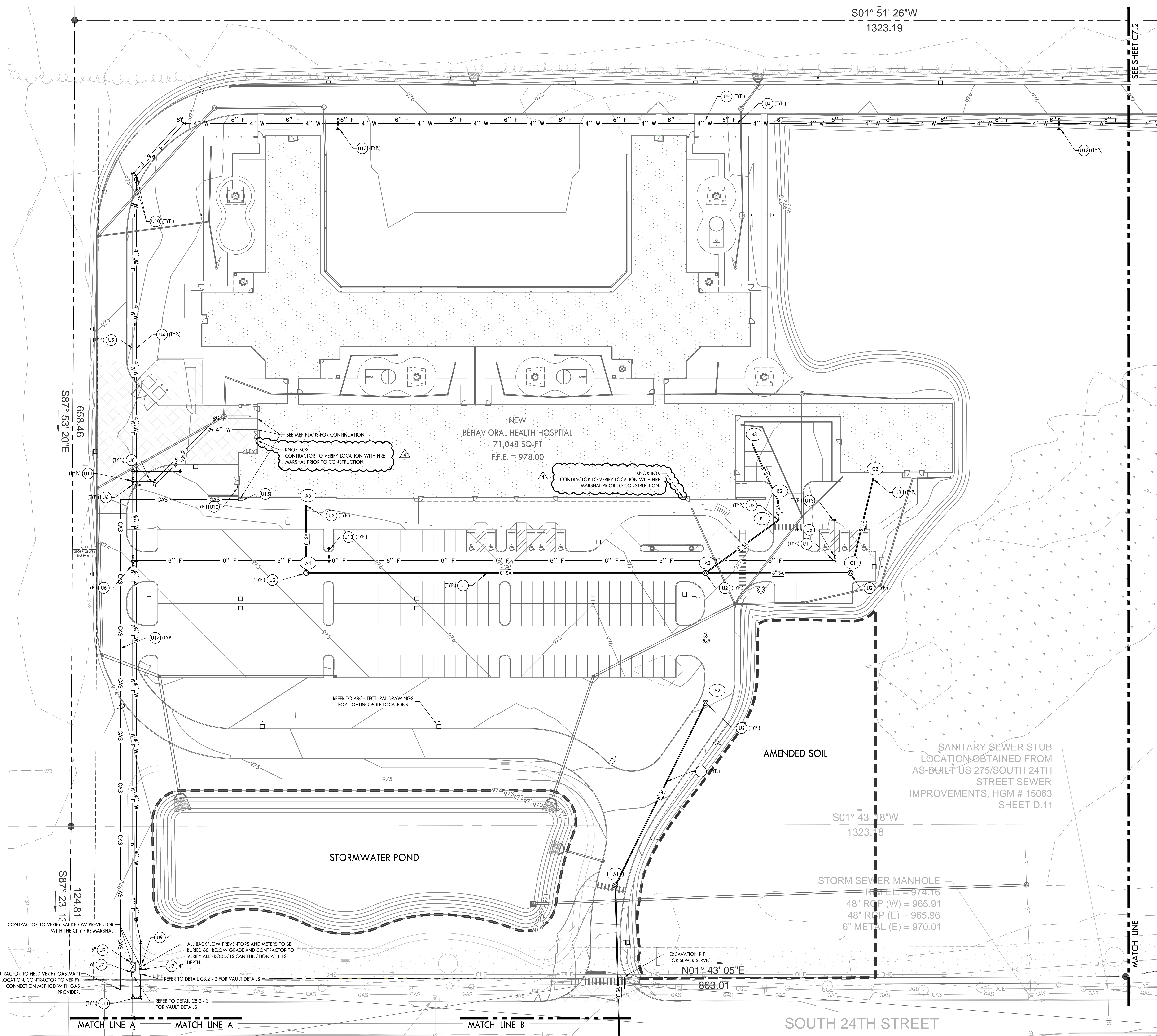
**ACADIA HEALTHCARE**

Professional Engineer Seal for William W. [Signature]  
IOWA  
52424

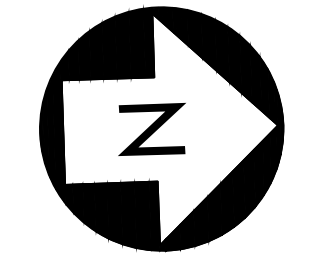
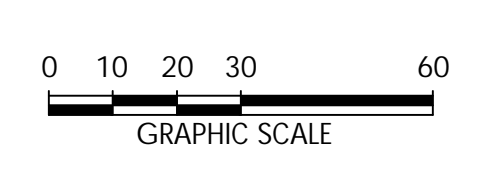
UTILITY PLAN  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA

30 Oct 2023  
AHC2246

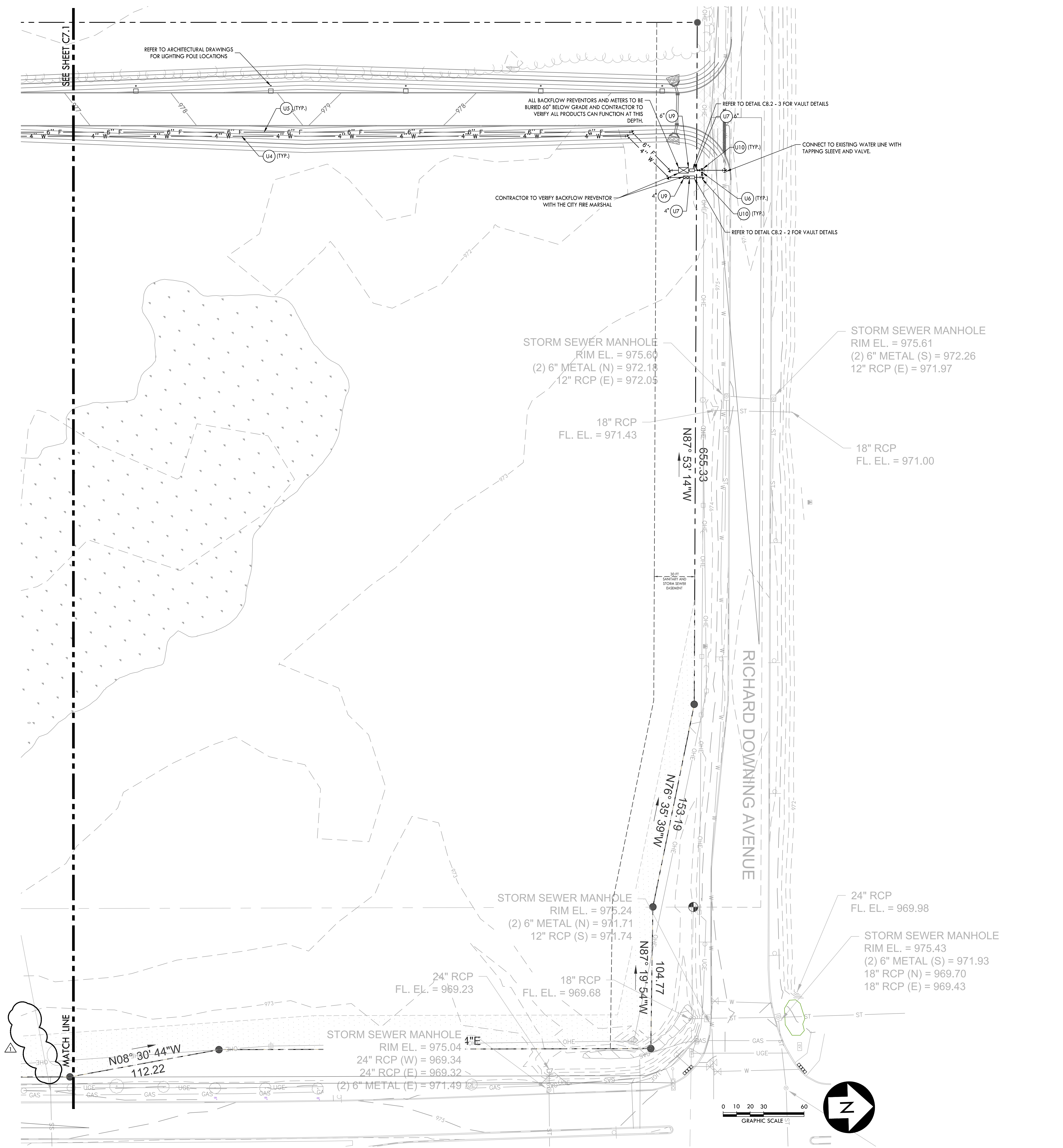
**C7.1**



CONNECT TO EXISTING MANHOLE. CONTRACTOR TO VERIFY LOCATION AND INVERT OF SEWER CONNECTION PRIOR TO COMMENCEMENT OF CONSTRUCTION.



CONSTRUCTION DOCUMENTS

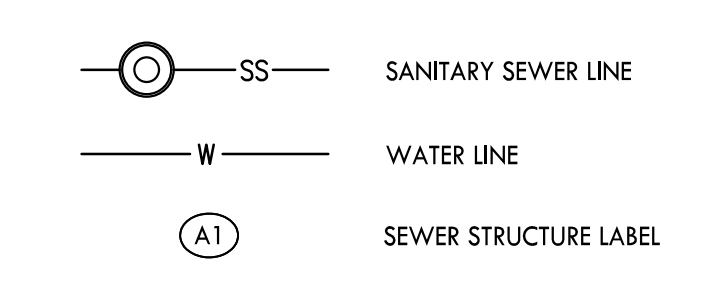


**UTILITY PLAN KEYNOTES**

CODE	DESCRIPTION	DETAIL LOCATION
U1	SANITARY SEWER LINE - SEE PLAN FOR SIZE	-
U2	SANITARY SEWER MANHOLE	C8.1 - 3
U3	SANITARY SEWER CLEANOUT	C8.1 - 1
U4	WATER LINE - SEE PLAN FOR SIZE	C8.2 - 5
U5	FIRE LINE - SEE PLAN FOR SIZE	C8.2 - 5
U6	GATE VALVE	C8.0 - 11
U7	WATER METER - SEE PLAN FOR SIZE	C8.2 - 2, C8.2 - 3
U8	POST INDICATOR VALVE	C8.2 - 4
U9	REDUCE PRESSURE BACKFLOW PREVENTER - SEE PLAN FOR SIZE	-
U10	THRUST BLOCK	C8.0 - 10
U11	TEE - SEE PLAN FOR SIZE	-
U12	FIRE DEPARTMENT CONNECTION	-
U13	FIRE HYDRANT ASSEMBLY	C8.1 - 9
U14	GAS LINE	-
U15	GAS METER	-

- NOTES:
- REFER TO SHEET C2.0 FOR NOTES.
  - REFER TO SHEET C7.2 FOR SANITARY PIPE AND STRUCTURE TABLES.
  - WATER AND FIRE LINE TO BE DIP FROM MAIN TO BACKFLOW PREVENTOR - ANY LINES FROM BACKFLOW TO BUILDING SHALL BE PVC

**PROPOSED UTILITY LEGEND**



**SANITARY SEWER STRUCTURE TABLE**

ID	RIM	INVERT	TYPE
A1	974.85	965.65	SANITARY JUNCTION MANHOLE
A2	975.95	967.00	SANITARY JUNCTION MANHOLE
A3	977.22	967.60	SANITARY JUNCTION MANHOLE
A4	975.34	970.20	SANITARY JUNCTION MANHOLE
A5	977.34	971.00	SANITARY CLEANOUT
B1	976.29	969.65	SANITARY CLEANOUT
B2	976.39	970.20	SANITARY CLEANOUT
B3	977.21	972.00	SANITARY CLEANOUT
C1	976.68	968.30	SANITARY JUNCTION MANHOLE
C2	977.53	972.00	SANITARY CLEANOUT
EX MH 1	974.90	964.00	SANITARY JUNCTION MANHOLE

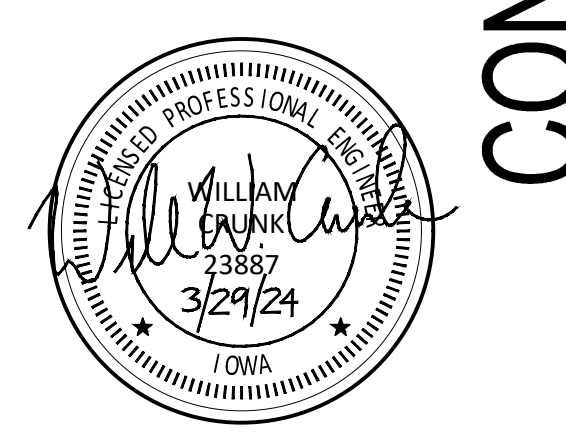
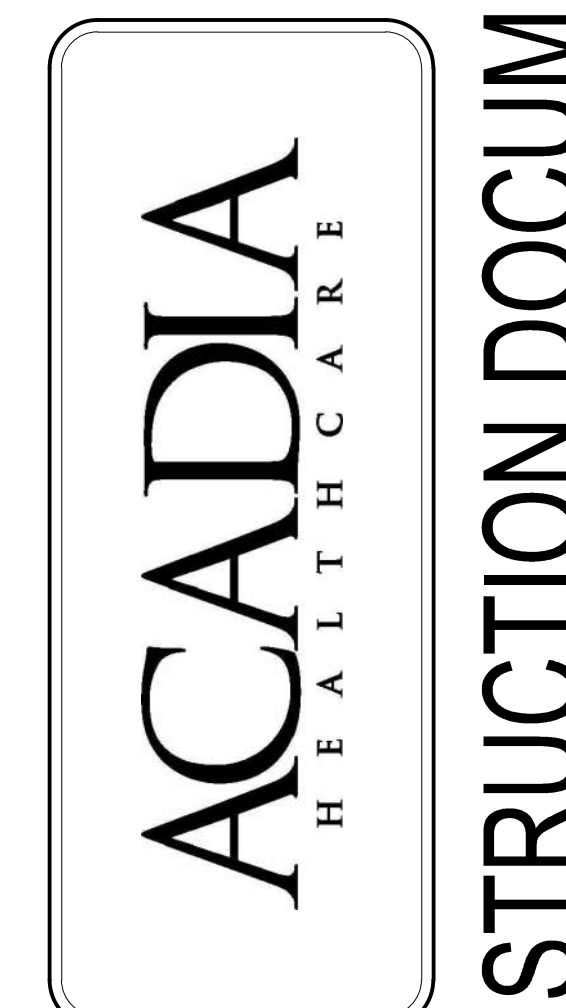
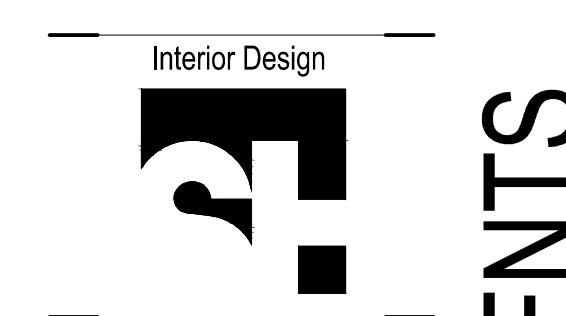
**SANITARY SEWER PIPE TABLE**

INLET	INVERT	OUTLET	INVERT	LENGTH (FT)	SLOPE (%)	DIAMETER (IN)	MATERIAL
A1	965.65	EX MH 1	964.00	175	0.94%	8	PVC
A2	967.00	A1	965.85	166	0.69%	8	PVC
A3	967.60	A2	967.20	106	0.38%	8	PVC
A4	970.20	A3	967.80	326	0.74%	8	PVC
A5	971.00	A4	970.40	55	1.09%	8	PVC
B1	969.65	A3	967.80	74	2.51%	8	PVC
B2	970.20	B1	969.65	16	3.50%	8	PVC
B3	972.00	B2	970.20	51	3.56%	8	PVC
C1	968.30	A3	967.80	119	0.42%	8	PVC
C2	972.00	C1	970.10	79	2.40%	8	PVC



**STENGEL HILL ARCHITECTURE**  
613 WEST MAIN STREET  
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Civil Engineering  
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Structural Engineering  
**SKYHOOK**  
STRUCTURAL ENGINEERING, P.C.  
Mechanical/Electrical Engineering



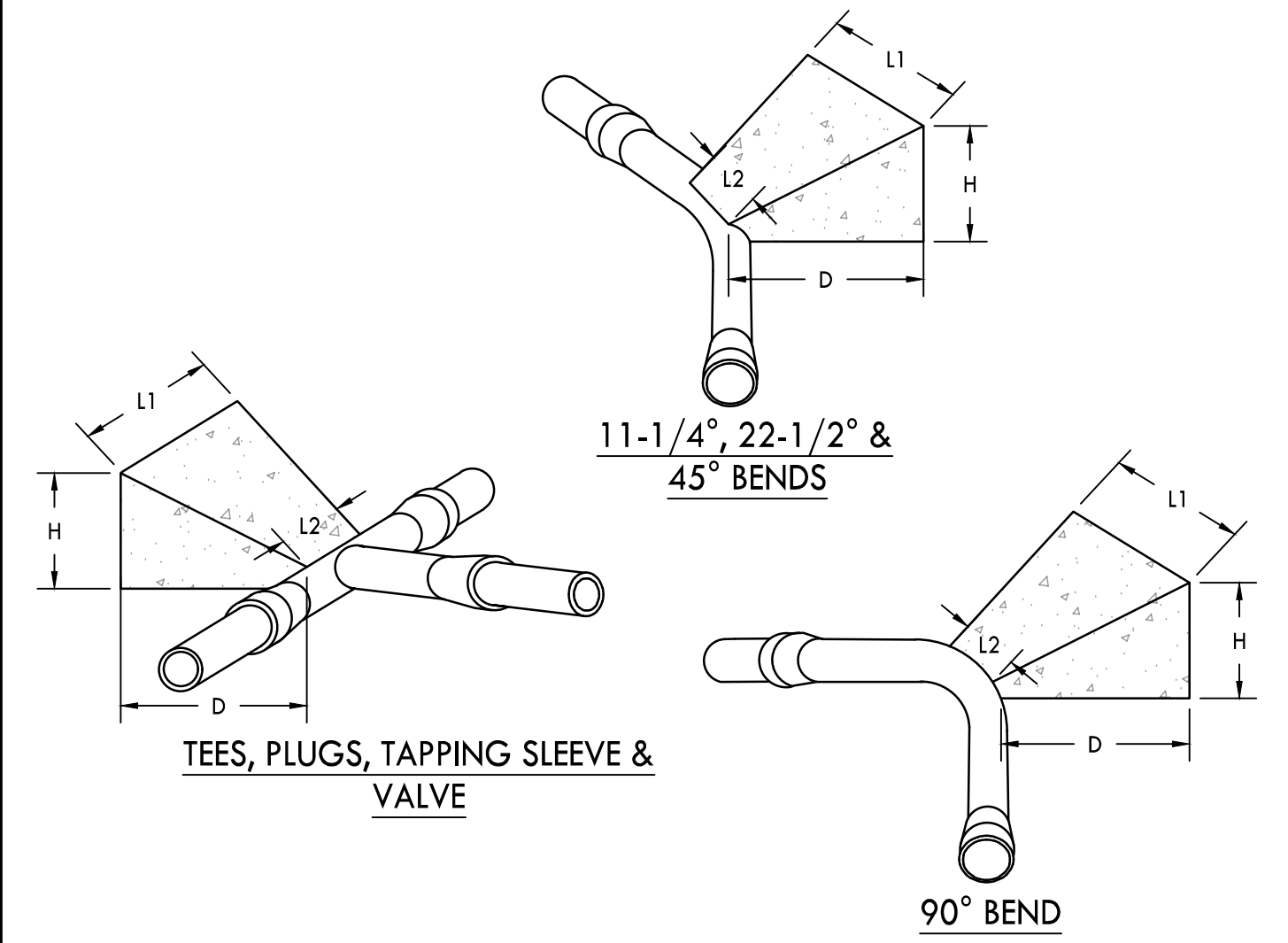
UTILITY PLAN  
NEW BEHAVIORAL HEALTH HOSPITAL  
HEALTHCARE COMPANY, INC.  
COUNCIL BLUFFS, IOWA

3/29/24 ADDM #4  
30 Oct 2023  
AHC2246

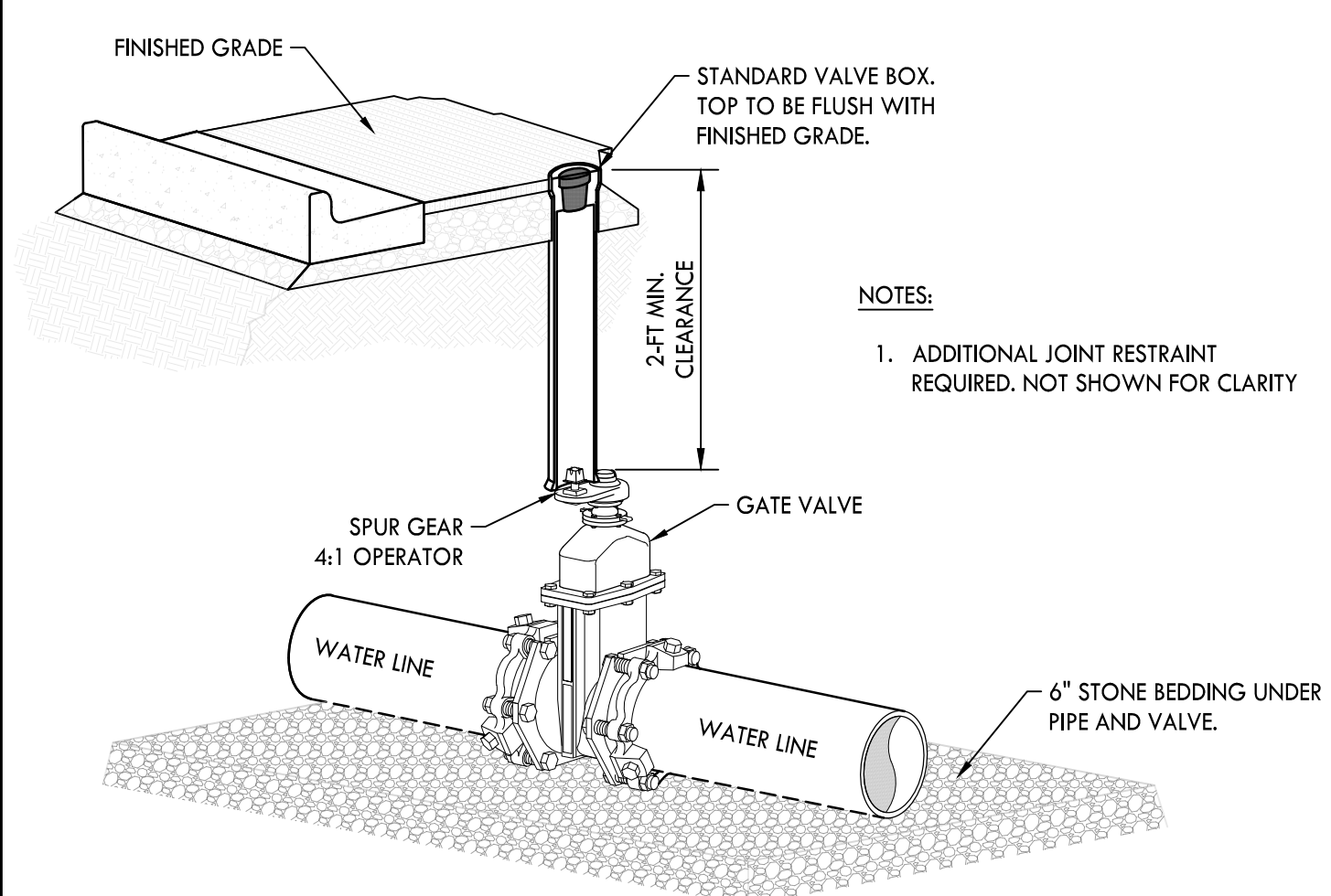
**C7.2**

CONSTRUCTION DOCUMENTS

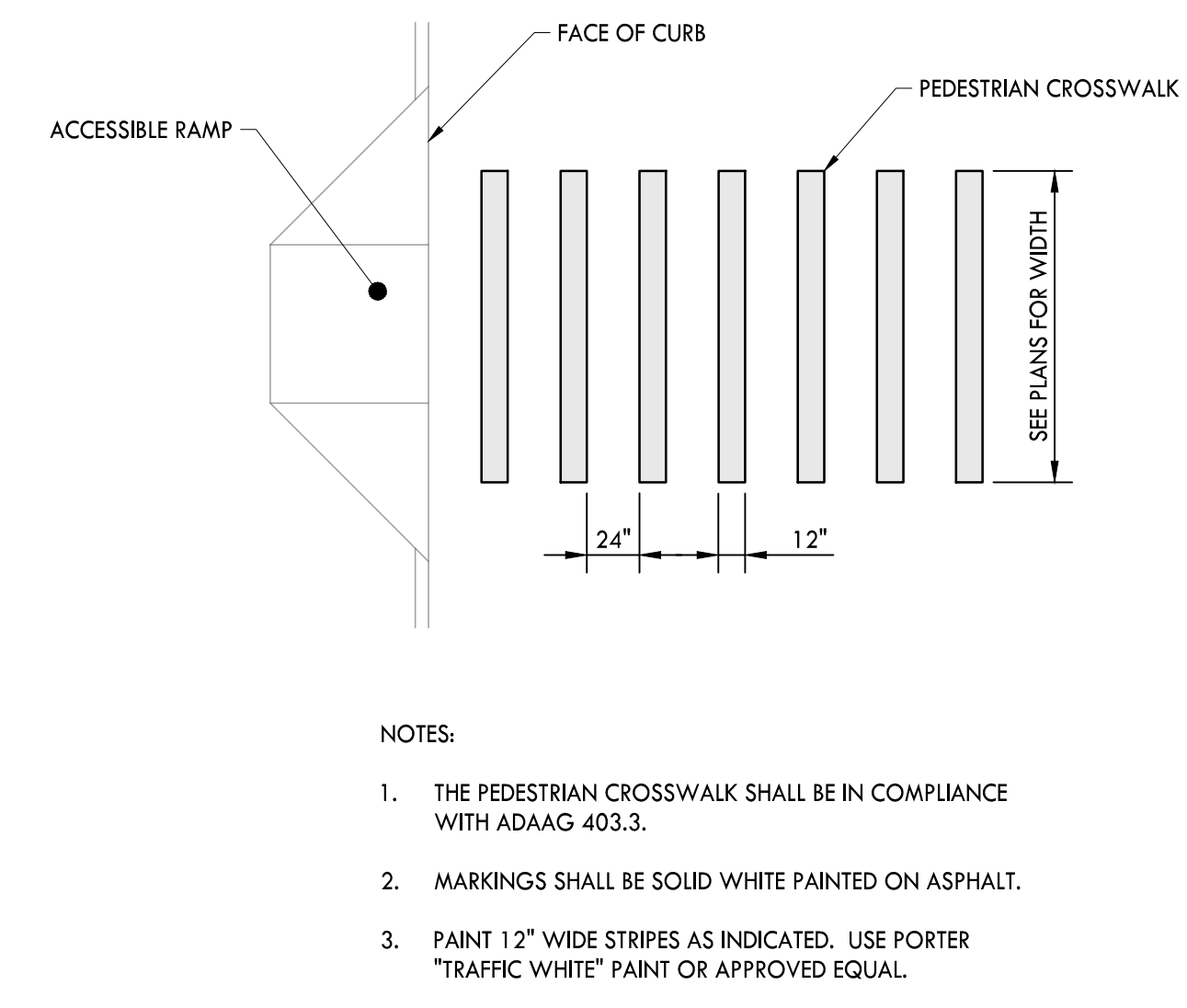
THRUST BLOCK DIMENSIONS							
PIPE SIZE (IN)	2" & 2-1/4"	3" & 4"	6"	8"	10"	12"	
TEE, PLUGS & TAPPING SLEEVES	L1	18"	24"	24"	36"	48"	54"
	L2	10"	12"	16"	18"	24"	30"
	H	12"	12"	18"	18"	18"	24"
	D	18"	18"	18"	18"	24"	24"
CU. FT	1.90	2.25	3.50	5.05	7.15	13.40	
90° BENDS	L1	18"	24"	30"	36"	54"	54"
	L2	10"	12"	16"	18"	32"	32"
	H	12"	12"	18"	24"	24"	36"
	D	18"	18"	18"	18"	18"	24"
CU. FT	1.90	2.25	4.05	7.30	10.25	18.15	
45° BENDS	L1	18"	18"	24"	30"	36"	42"
	L2	6"	8"	10"	11"	18"	18"
	H	12"	12"	16"	18"	21"	24"
	D	18"	18"	18"	18"	18"	24"
CU. FT	1.50	1.60	3.20	3.95	4.60	9.60	
22-1/2° BENDS	L1	18"	18"	24"	24"	24"	24"
	L2	6"	8"	10"	11"	18"	18"
	H	12"	12"	16"	18"	21"	24"
	D	18"	18"	18"	18"	18"	24"
CU. FT	1.50	1.60	3.20	3.40	4.60	6.80	
11-1/4° BENDS	L1	18"	18"	24"	24"	24"	24"
	L2	6"	8"	10"	11"	18"	18"
	H	12"	12"	16"	18"	21"	21"
	D	18"	18"	18"	18"	18"	24"
CU. FT	1.50	1.60	3.20	3.40	4.60	6.10	



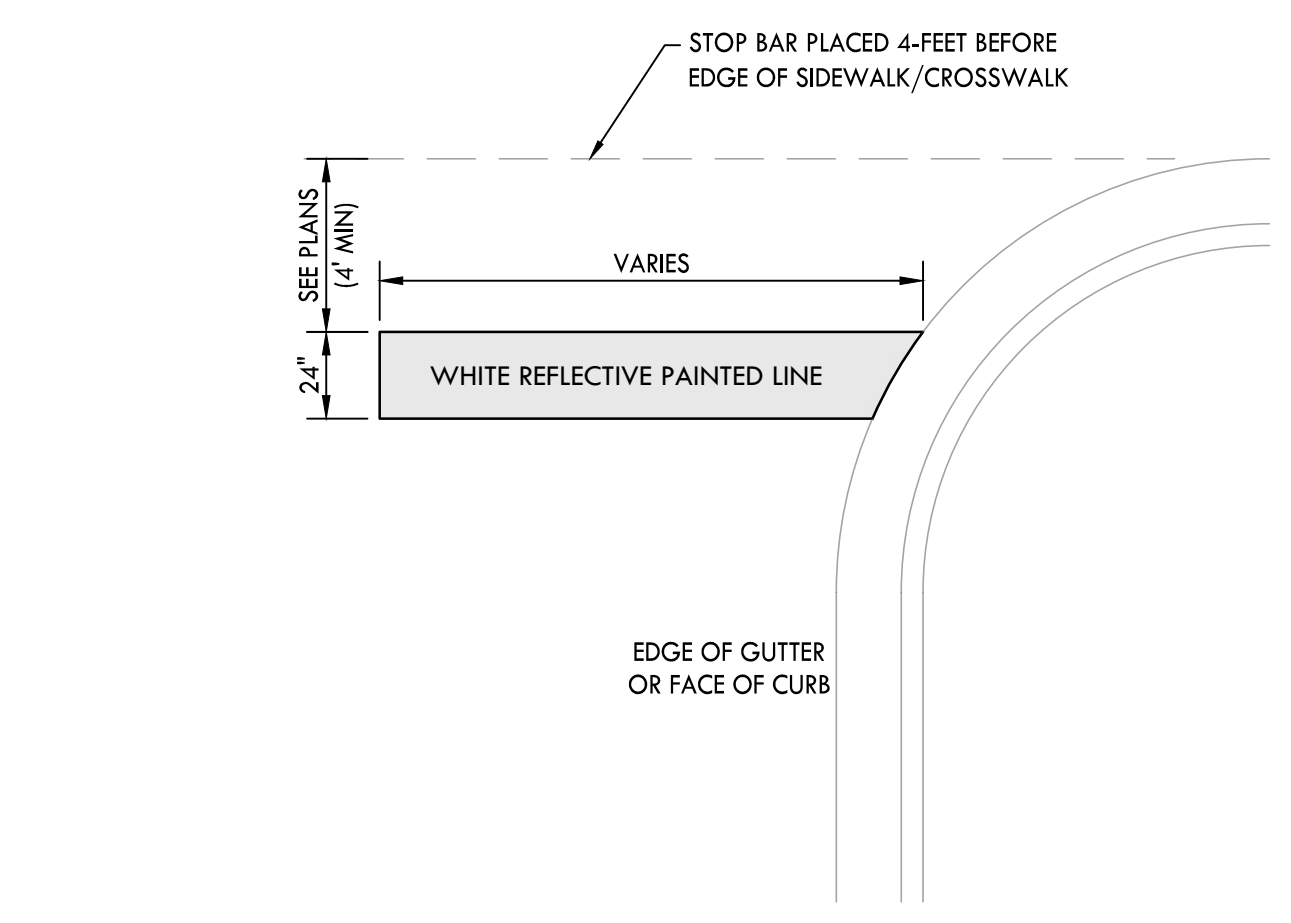
**10** **THRUST BLOCKS**  
NOT TO SCALE



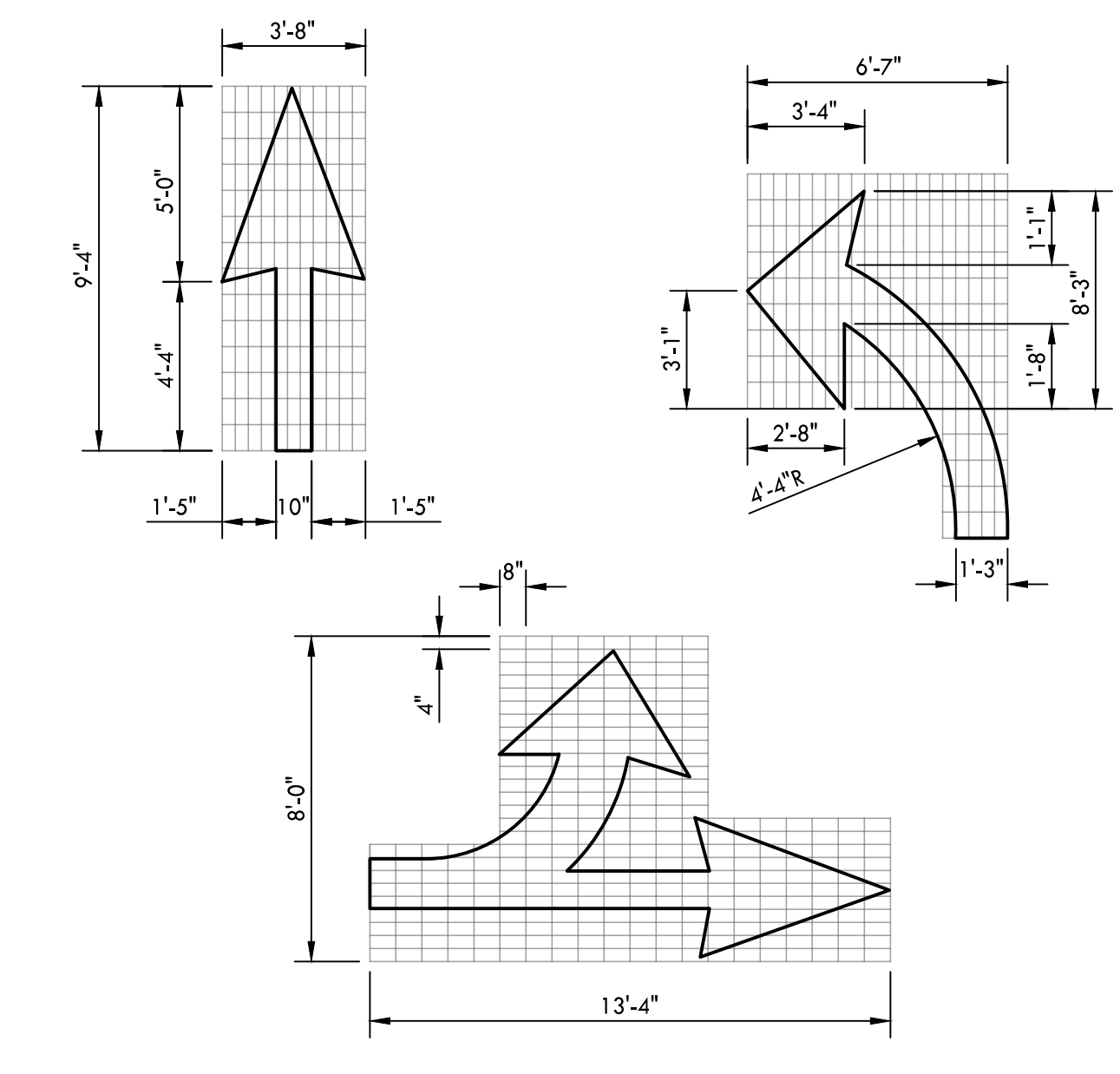
**11** **GATE VALVE**  
NOT TO SCALE



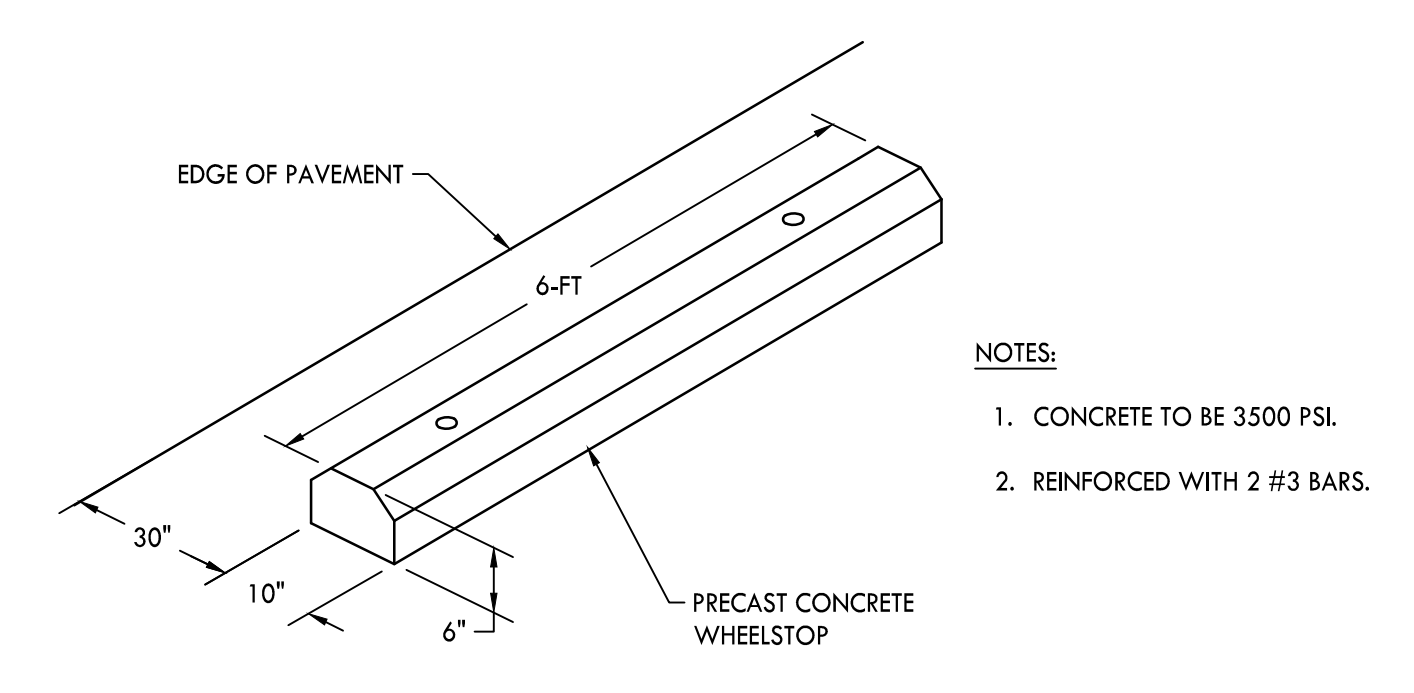
**7** **PEDESTRIAN CROSSWALK**  
NOT TO SCALE



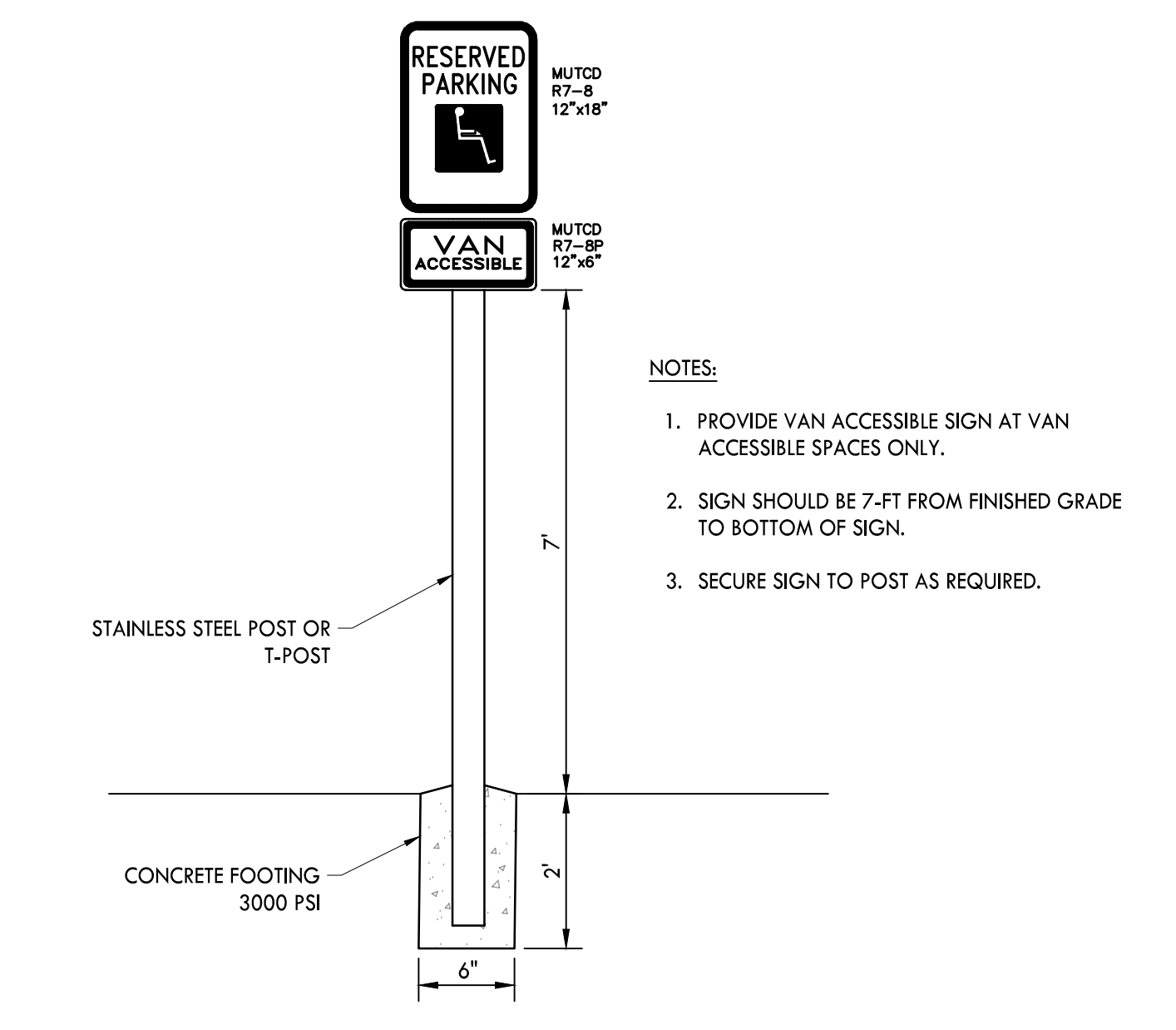
**8** **24" PAINTED STOP BAR**  
NOT TO SCALE



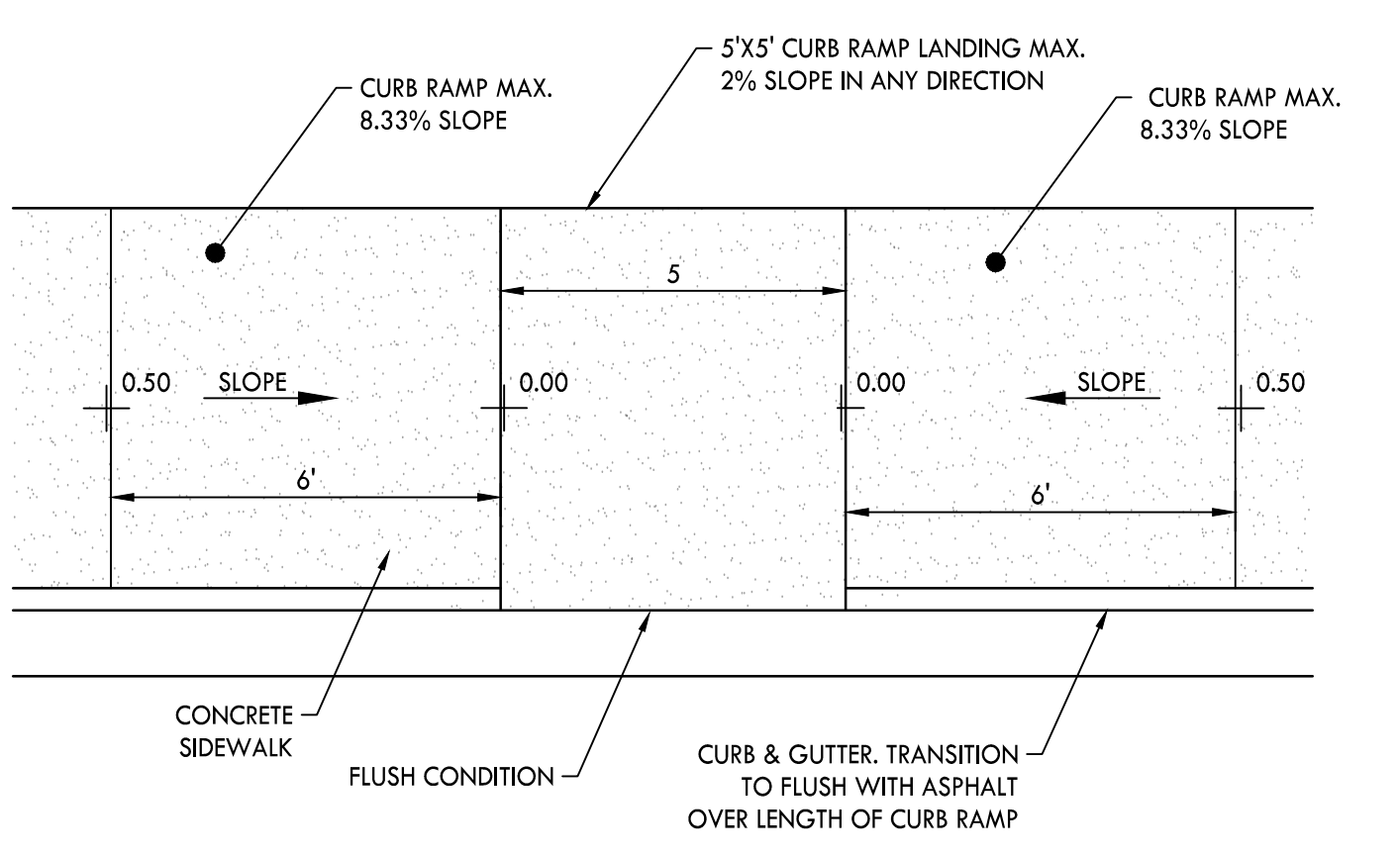
**9** **DIRECTIONAL ARROW**  
NOT TO SCALE



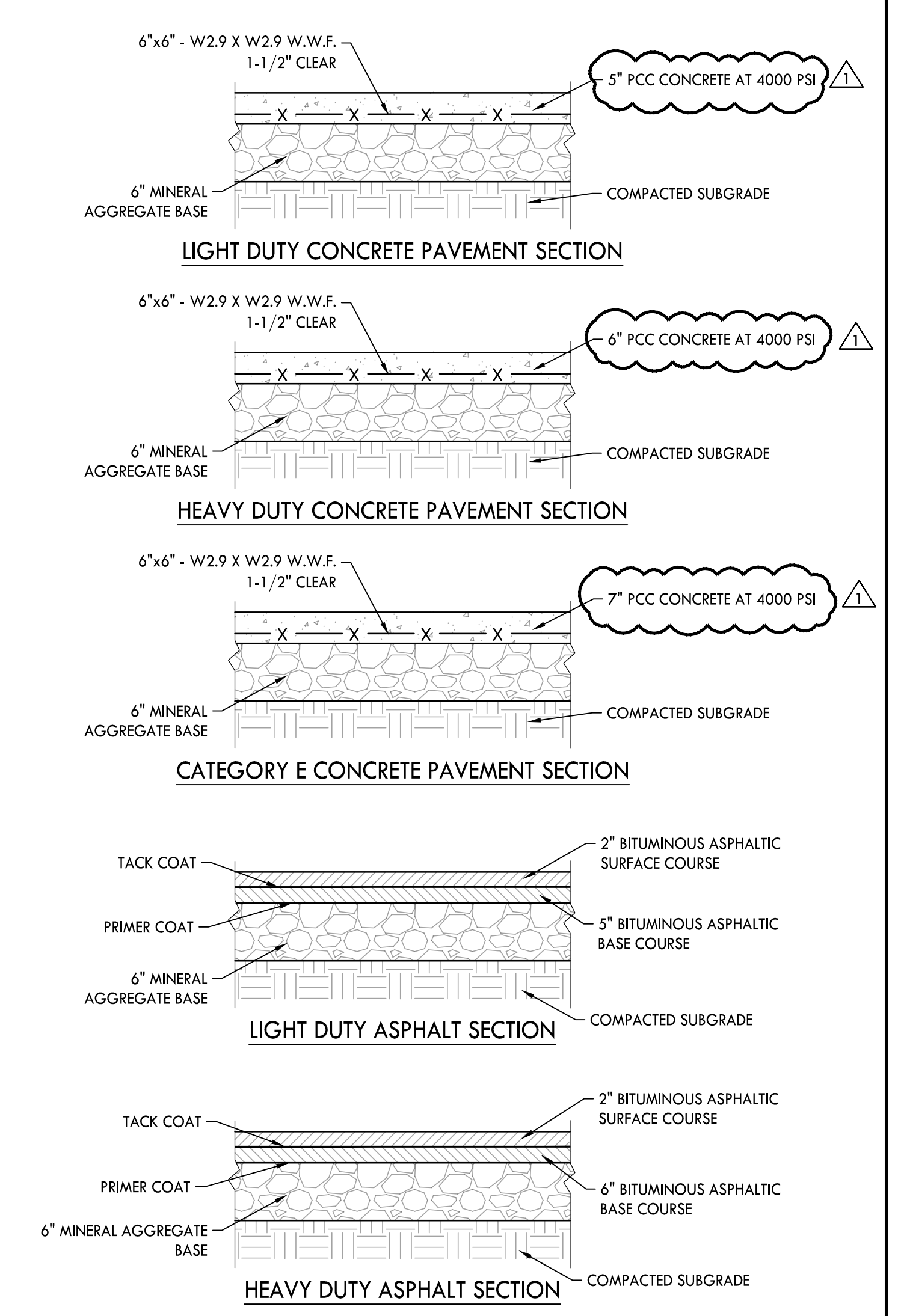
**4** **CONCRETE WHEELSTOP**  
NOT TO SCALE



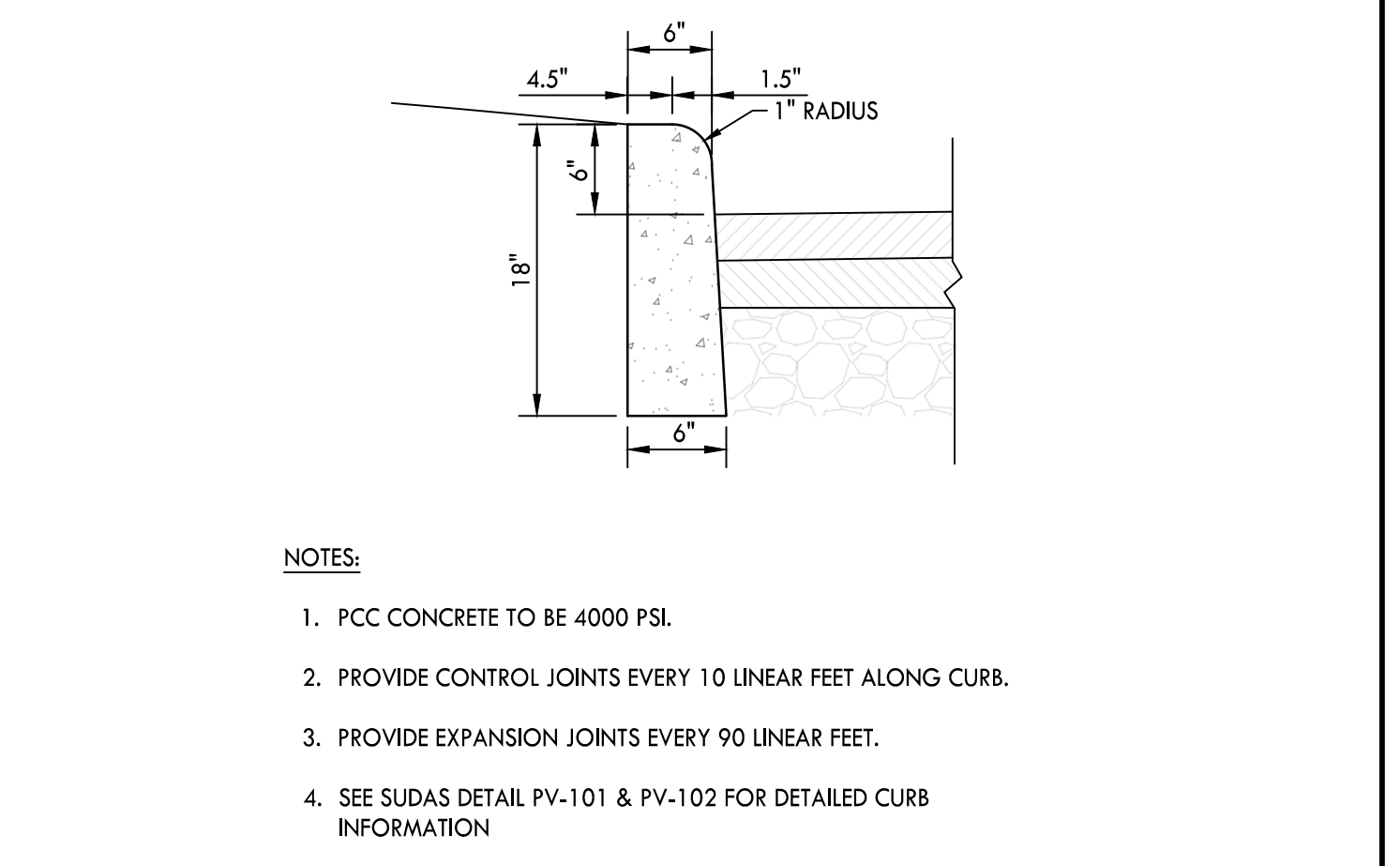
**5** **ACCESSIBLE PARKING SIGN**  
NOT TO SCALE



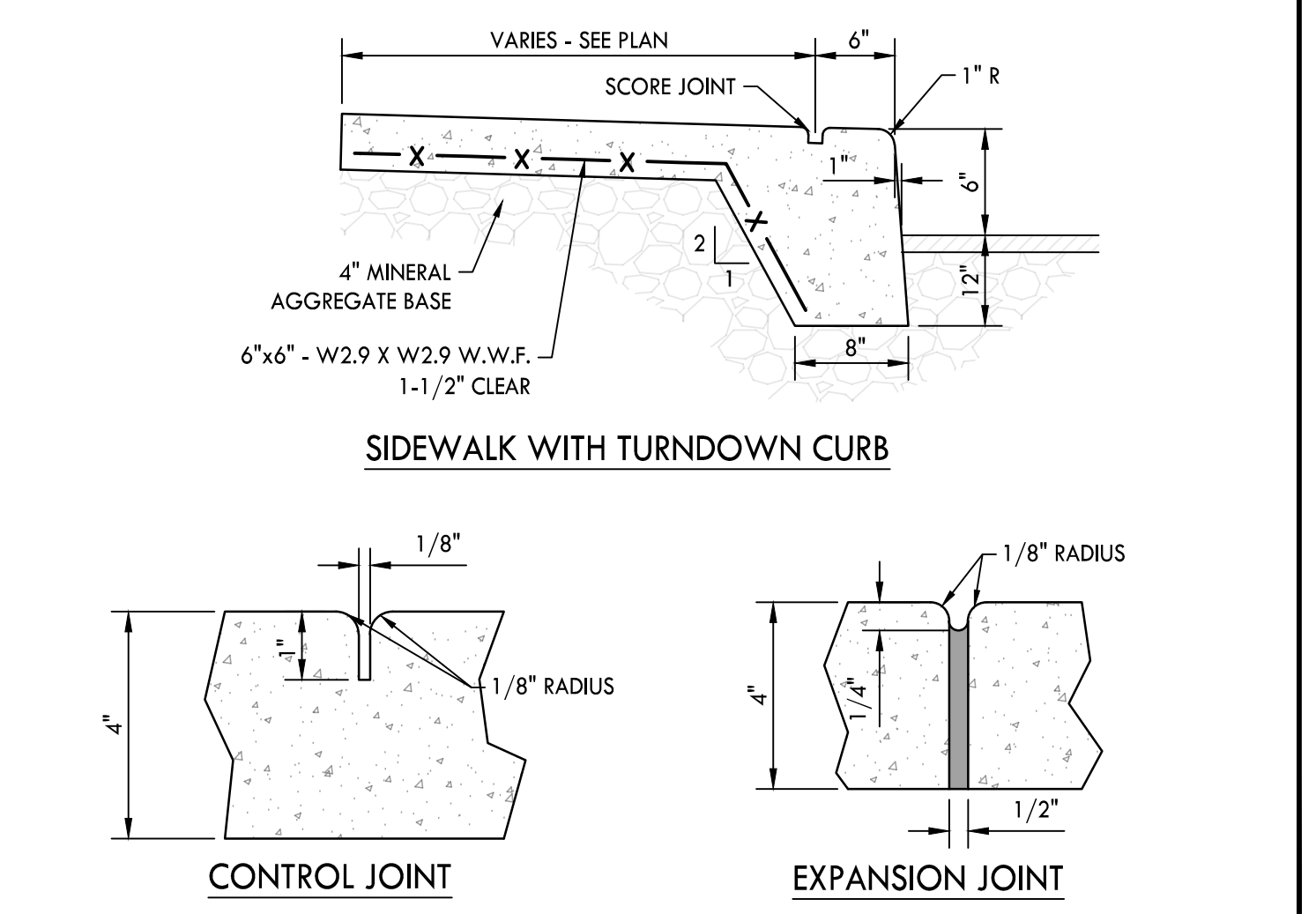
**6** **CURB RAMP AT ACCESSIBLE PARKING**  
NOT TO SCALE



**1** **PAVEMENT SECTIONS**  
NOT TO SCALE



**2** **POST CURB**  
NOT TO SCALE



**3** **CONCRETE SIDEWALK**  
NOT TO SCALE





**STENGEN HILL ARCHITECTURE**  
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Civil Engineering  
  
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 HEALTHCARE COMPANY, INC.  
 COUNCIL BLUFFS, IOWA**

30 Oct 2023  
 AHC2246

**C8.1**

Dimension "F" shown is the minimum and is considered the design length. Adjust for any difference between the actual length of concrete apron installed and the length indicated below for the length of concrete sewer pipe furnished.

① Tongue and seal on inlet end section. Groove end used on outlet end section.

TYPE 1 APRONS					TYPE 2 APRONS					
DIAM	SLOPE	A	B	MINIMUM F	DIAM	SLOPE	A	B	MINIMUM F	
12"	2.4:1	4"	2'-0"	4'-3"	2'-0"	12"	2.4:1	4"	2'-0"	4'-3"
15"	2.4:1	6"	2'-3"	3'-10"	3'-1"	15"	2.4:1	6"	2'-3"	3'-10"
18"	2.4:1	8"	2'-6"	3'-10"	3'-2"	18"	2.4:1	8"	2'-6"	3'-10"
21"	2.4:1	10"	2'-9"	3'-10"	3'-3"	21"	2.4:1	10"	2'-9"	3'-10"
24"	2.4:1	12"	3'-0"	3'-10"	3'-4"	24"	2.4:1	12"	3'-0"	3'-10"
27"	2.4:1	15"	3'-3"	3'-10"	3'-5"	27"	2.4:1	15"	3'-3"	3'-10"
30"	2.4:1	18"	3'-6"	3'-10"	3'-6"	30"	2.4:1	18"	3'-6"	3'-10"
36"	2.4:1	24"	4'-0"	3'-10"	3'-8"	36"	2.4:1	24"	4'-0"	3'-10"
42"	2.4:1	30"	4'-6"	3'-10"	3'-10"	42"	2.4:1	30"	4'-6"	3'-10"
48"	2.4:1	36"	5'-0"	3'-10"	3'-11"	48"	2.4:1	36"	5'-0"	3'-10"
54"	1.8:1	24"	3'-0"	3'-0"	3'-0"	54"	1.8:1	24"	3'-0"	3'-0"
60"	1.8:1	30"	3'-6"	3'-0"	3'-0"	60"	1.8:1	30"	3'-6"	3'-0"
66"	1.8:1	36"	4'-0"	3'-0"	3'-0"	66"	1.8:1	36"	4'-0"	3'-0"
72"	1.8:1	30"	3'-6"	3'-0"	3'-0"	72"	1.8:1	30"	3'-6"	3'-0"
78"	1.8:1	36"	4'-0"	3'-0"	3'-0"	78"	1.8:1	36"	4'-0"	3'-0"
84"	1.8:1	36"	4'-0"	3'-0"	3'-0"	84"	1.8:1	36"	4'-0"	3'-0"

SUDAS Standard Specifications  
 CIRCULAR CONCRETE APRONS

**7 CONCRETE HEADWALL (SUDAS 4030.222)**  
 NOT TO SCALE

Stable Ground  
 Slope = 0%  
 Thickness, T  
 Engineering Fabric  
 Construct notch at end of apron. Depth = 2T  
 Footing for Apron

SUDAS Standard Specifications  
 RIP RAP FOR PIPE OUTLET ONTO FLAT GROUND

**8 RIP RAP OUTLET PROTECTION (SUDAS 9040.110)**  
 NOT TO SCALE

Use ductile iron pipe with restrained mechanical joints for fire hydrant assembly and anchor tee.  
 All shaded items are included in the Fire Hydrant Assembly bid item.  
 See the contract documents for the location of each hydrant and the length of anchoring pipe.  
 ① Do not cover drain holes or tracer wire.

SUDAS Standard Specifications  
 FIRE HYDRANT ASSEMBLY

**9 FIRE HYDRANT ASSEMBLY (SUDAS WM-201)**  
 NOT TO SCALE

Manhole depth exceeds 20 feet, install steps.  
 ① Cast-in-place base shown. If base is precast, precast rings with bottom riser. The footprint of the base is not required to extend beyond the outer edge of the riser.  
 ② For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.  
 ③ 12 inch minimum riser height above all pipe openings.

Manhole Diameter (Inches)	Maximum Pipe Diameter (Inches) for 2 Pipes at 180° Separation	Maximum Pipe Diameter (Inches) for 2 Pipes at 90° Separation
48	24	18
60	30	24
72	42	30
84	48	36
96	60	42

SUDAS Standard Specifications  
 CIRCULAR STORM SEWER MANHOLE

**4 STORM SEWER MANHOLE (SUDAS SW-401)**  
 NOT TO SCALE

Refer to SW-514 for boxout details.  
 ① SW-502 Type R unless Type Q is specified in the contract documents.  
 ② Cast-in-place base shown. Base may be square. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.  
 ③ For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.  
 ④ 12 inch minimum riser height above all pipes.

Manhole Diameter (Inches)	Maximum Pipe Diameter (Inches) for 2 Pipes at 180° Separation	Maximum Pipe Diameter (Inches) for 2 Pipes at 90° Separation
48	24	18
60	30	24
72	42	30
84	48	36
96	60	42

SUDAS Standard Specifications  
 CIRCULAR SINGLE GRATE INTAKE

**5 SINGLE CURB INLET (SUDAS SW-502)**  
 NOT TO SCALE

REINFORCING BAR LIST					REINFORCING BAR LIST						
D	W	Mark	Size	Length	Count	D	W	Mark	Size	Length	Count
12"	2'-4"	411	4	2'-0"	2	48"	7'-10"	411	4	7'-8"	3
15"	2'-10 1/2"	412	4	3'-8"	2	54"	8'-5"	411	4	8'-11"	3
18"	3'-5"	412	4	3'-8"	2	60"	8'-11"	411	4	8'-7"	3
24"	4'-6"	411	4	4'-2"	3	66"	8'-11"	411	4	8'-7"	3
30"	5'-7"	412	4	3'-8"	2	72"	10'-0"	411	4	9'-8"	3
36"	6'-8"	412	4	3'-8"	2	78"	10'-7"	411	4	10'-3"	3
42"	7'-3"	412	4	3'-8"	2	84"	11'-4"	411	4	10'-9"	3

SUDAS Standard Specifications  
 RCP APRON SECTION FOOTING

**6 HEADWALL FOOTING (SUDAS 4030.221)**  
 NOT TO SCALE

Standard duty casting complying with AASHTO M 308. Mark "A" with "Sanitary" or "Sanitary C.O."  
 Do not allow casting to bear on top of riser pipe.  
 6 inch PVC Service Pipe  
 Threaded PVC cap or iron body female with brass screw plug

SUDAS Standard Specifications  
 SANITARY SEWER CLEANOUT

**1 SANITARY SEWER CLEANOUT (SUDAS SW-203)**  
 NOT TO SCALE

Use in non-traffic areas.  
 Light duty casting. Label lid with "Storm" or "Storm C.O."  
 Do not allow casting to bear on top of riser pipe; provide 2 inch clearance, minimum.  
 A manufacturer's cleanout may be used in lieu of a Type B cleanout, if approved by the Engineer.  
 Design is intended for use in conjunction with 8 inch PVC riser pipe. Other sized caps may be used with smaller pipes, as approved by the Engineer.  
 Provide Type G casting, as required to fit pipe size.  
 PVC riser pipe; match diameter of subdrain (8 inches maximum).

SUDAS Standard Specifications  
 SUBDRAIN CLEANOUTS

**2 STORM SEWER CLEANOUT (SUDAS 4040.232)**  
 NOT TO SCALE

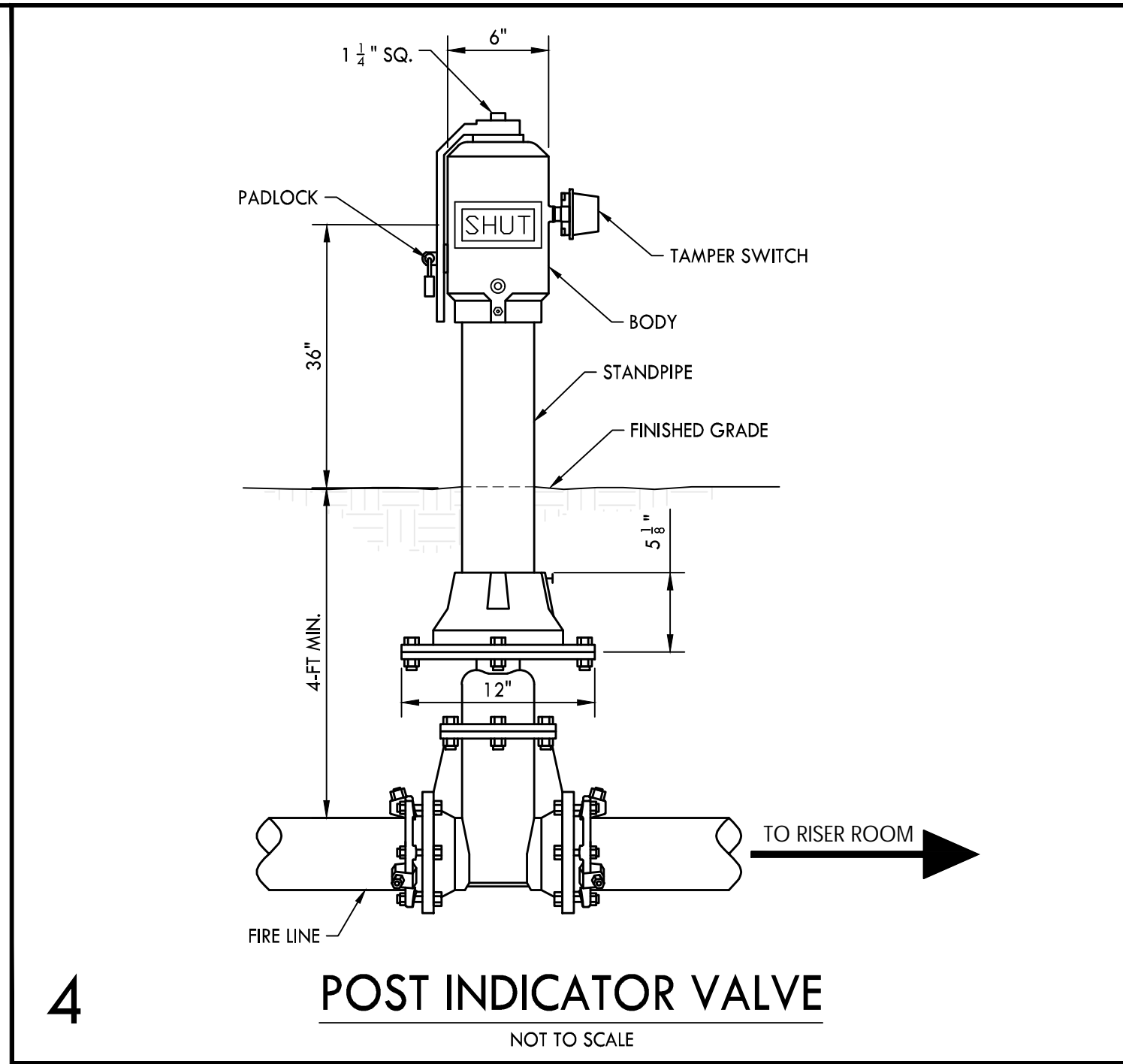
Manhole depth exceeds 20 feet, install steps.  
 Install infiltration barrier.  
 For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.  
 12 inch minimum riser height above all pipe openings.  
 When specified, provide an eccentric flat top in lieu of eccentric cone section.

Manhole Diameter (Inches)	Maximum Pipe Diameter (Inches) for 2 Pipes at 180° Separation	Maximum Pipe Diameter (Inches) for 2 Pipes at 90° Separation
48	24	18
60	30	24
72	42	30
84	48	36
96	60	42

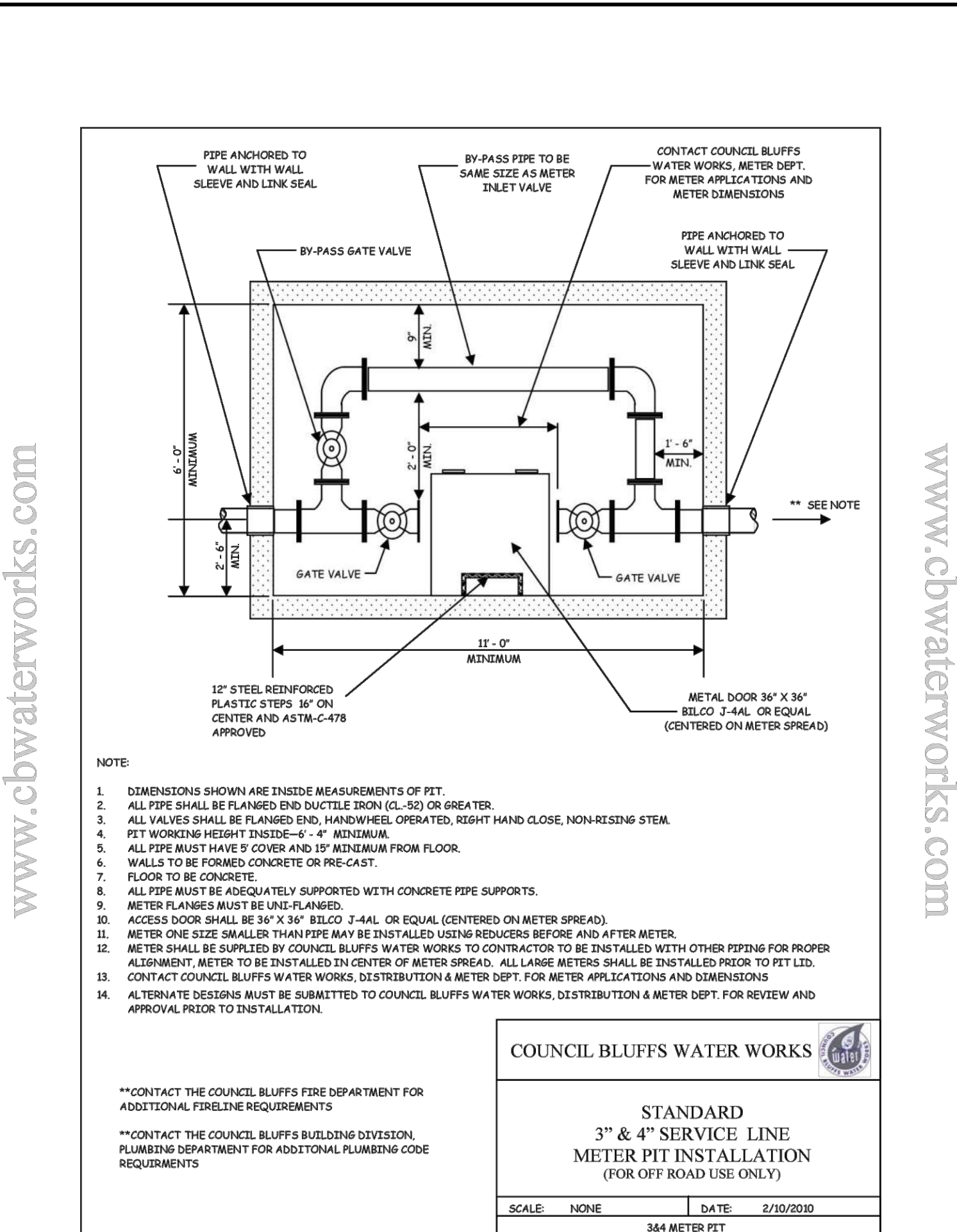
SUDAS Standard Specifications  
 CIRCULAR SANITARY SEWER MANHOLE

**3 SANITARY SEWER MANHOLE (SUDAS SW-301)**  
 NOT TO SCALE

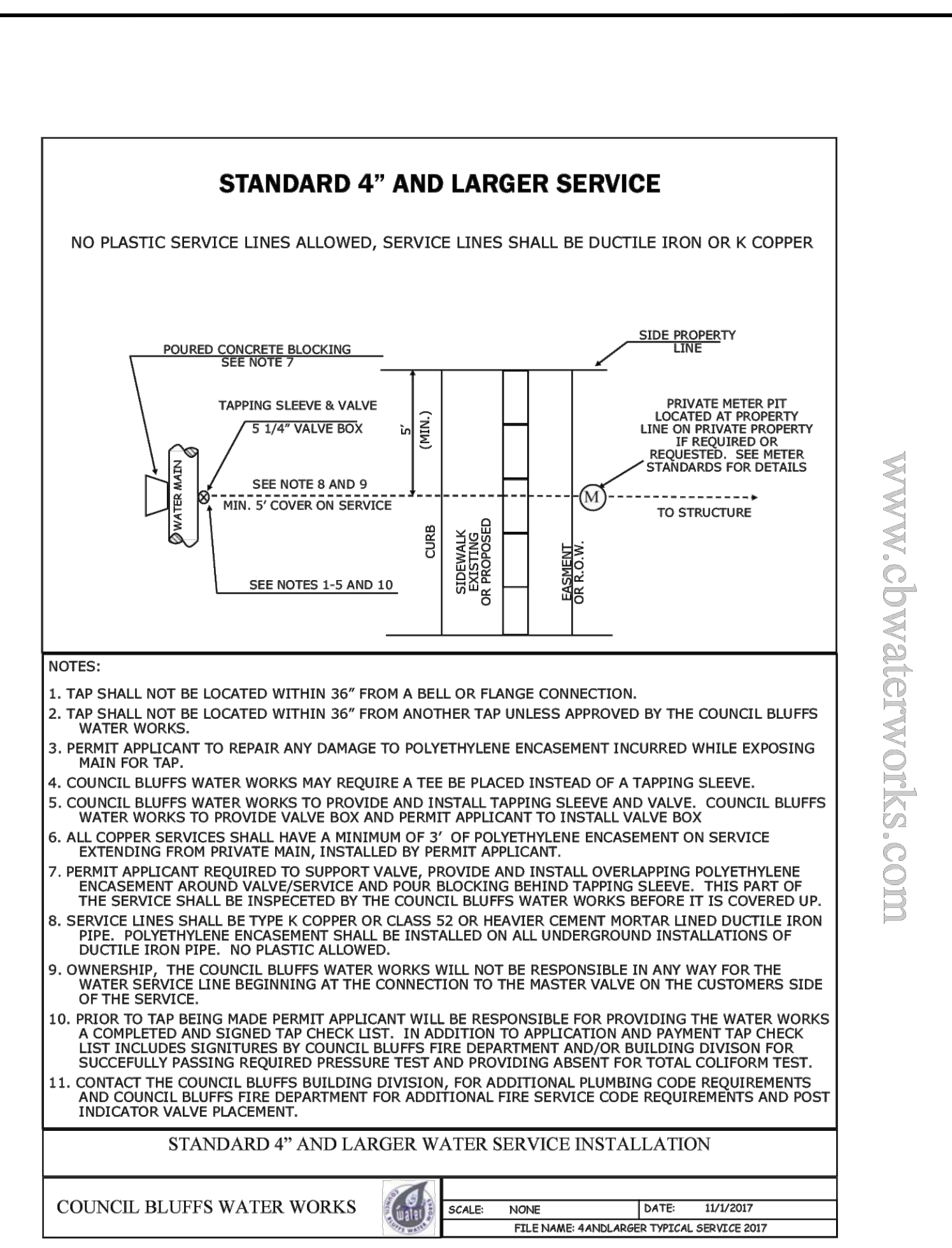
CONSTRUCTION DOCUMENTS



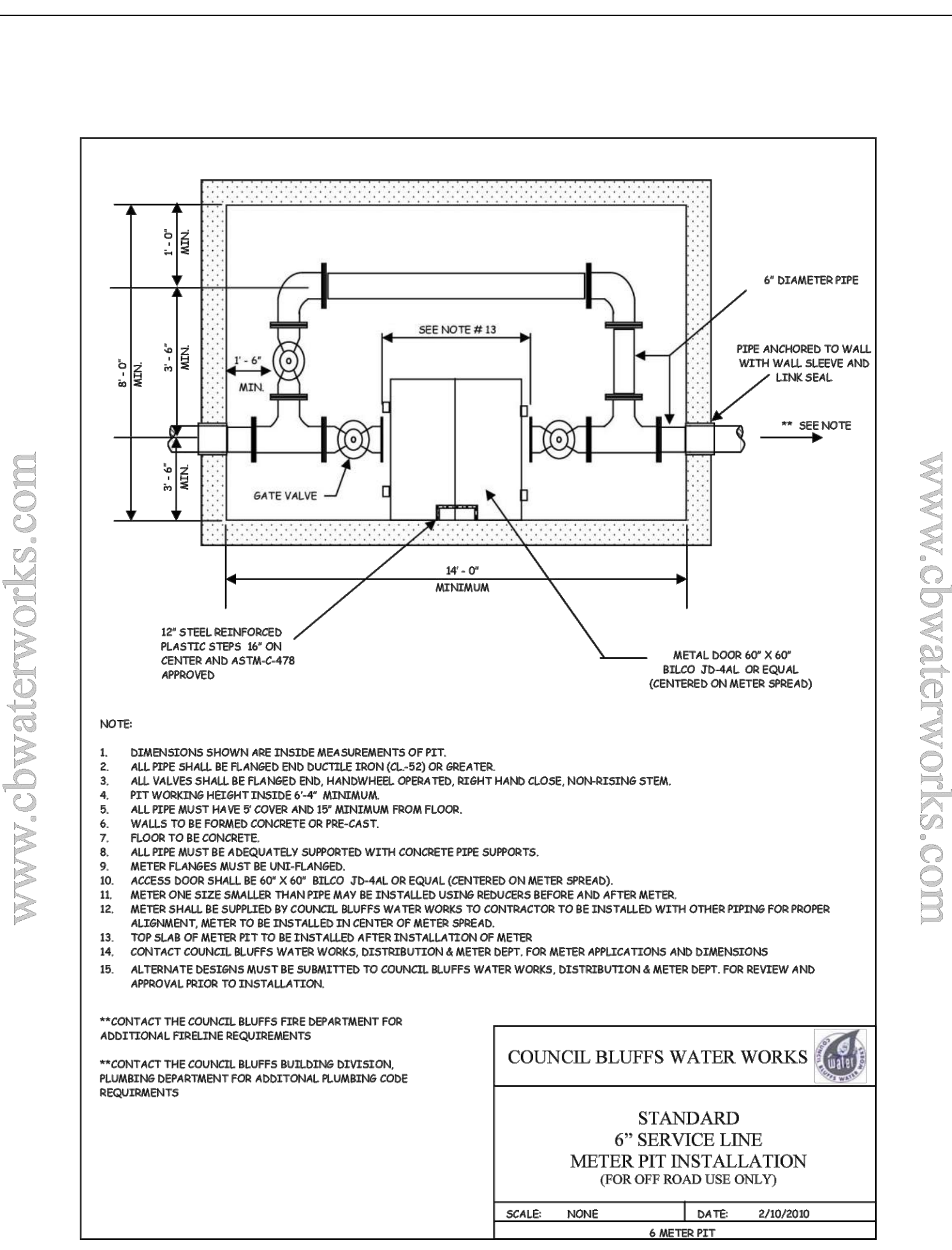
**4 POST INDICATOR VALVE**  
NOT TO SCALE



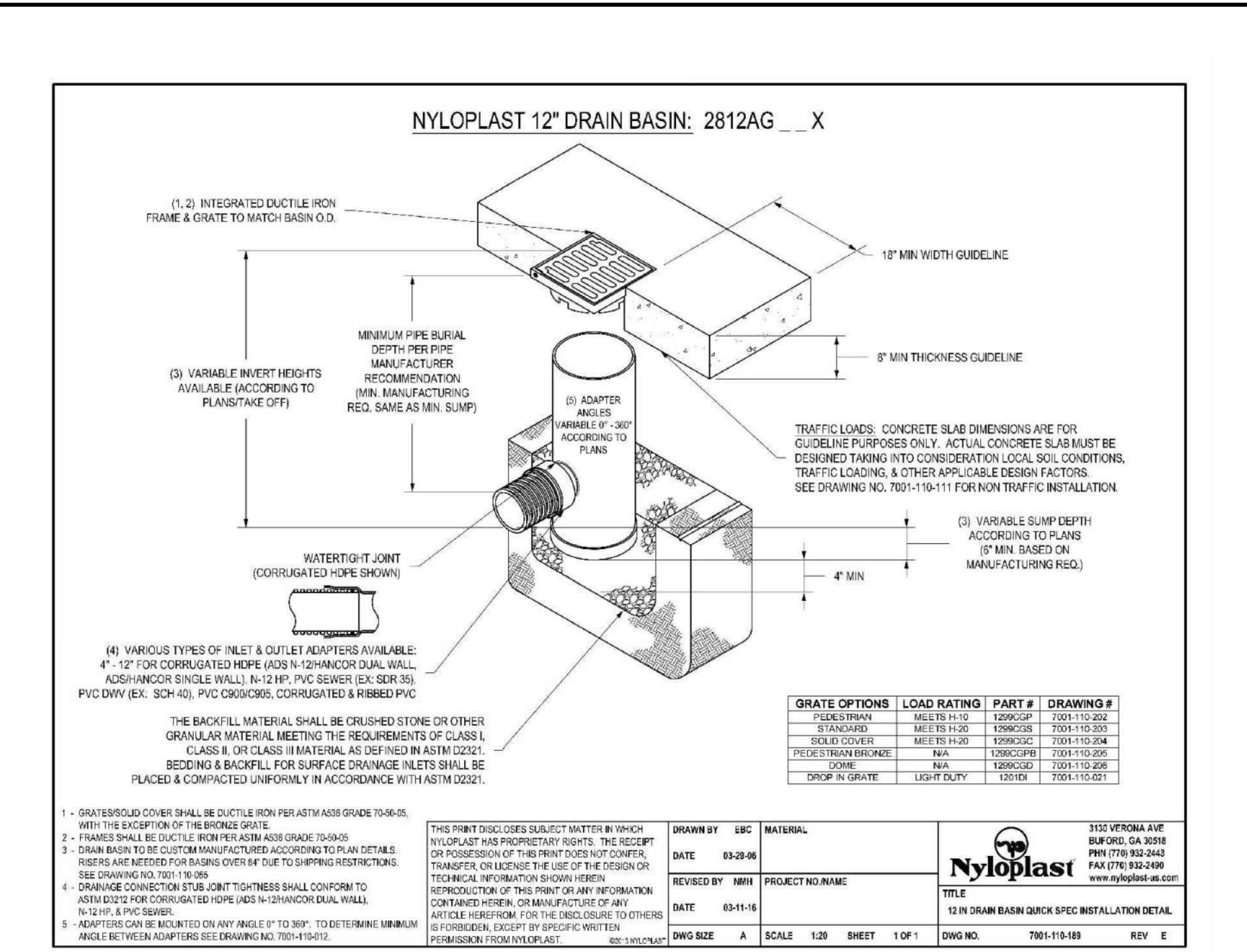
**2 4" WATER METER PIT**  
NOT TO SCALE



**5 STANDARD 4" OR LARGER SERVICE LINE**  
NOT TO SCALE



**3 6" WATER METER PIT**  
NOT TO SCALE



**1 NYLOPLAST DRAIN**  
NOT TO SCALE

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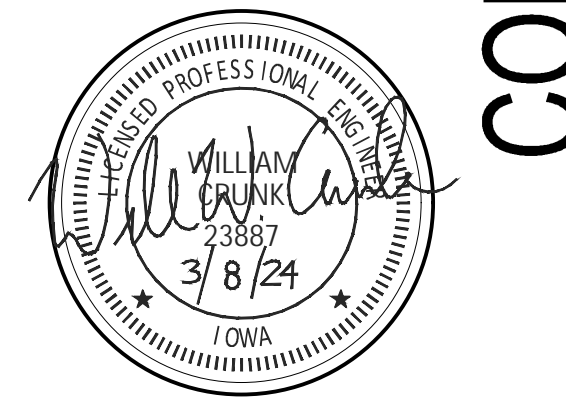
**STENGEN HILL ARCHITECTURE**  
613 WEST MAIN STREET  
LOUISVILLE, KENTUCKY 40202  
502.893.1875  
502.893.1876 fax



Mechanical/Electrical Engineering



Interior Design

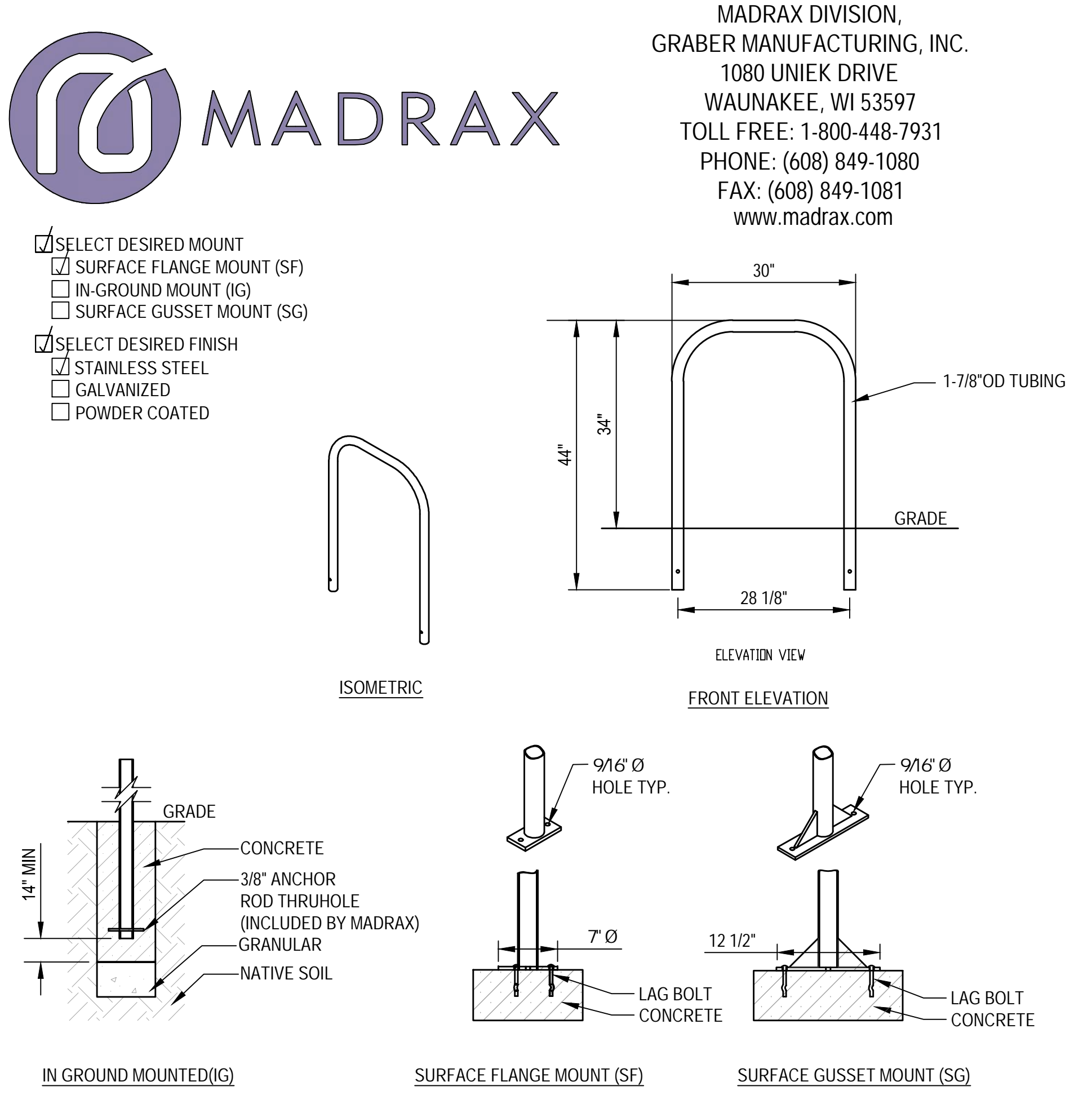
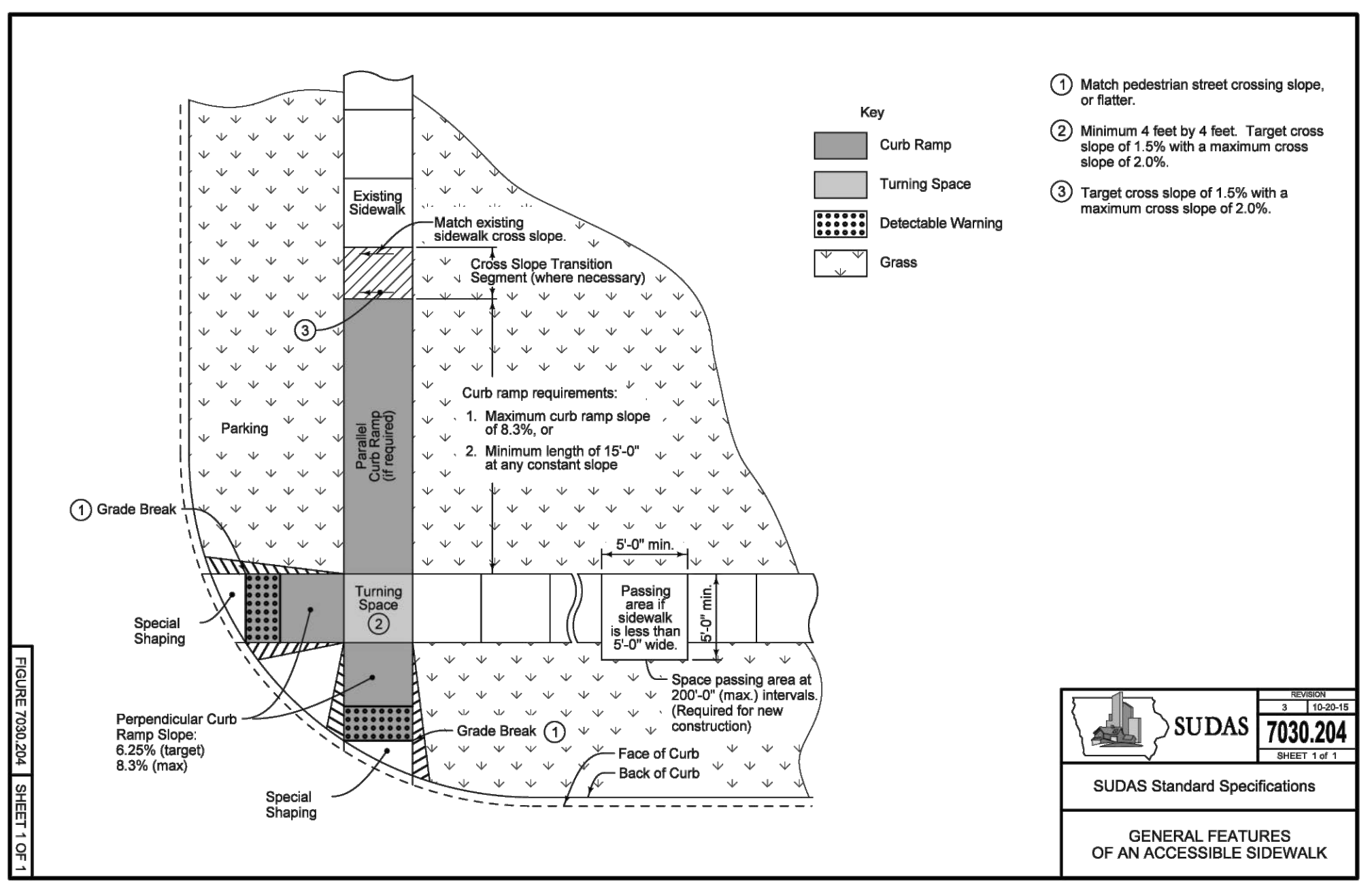
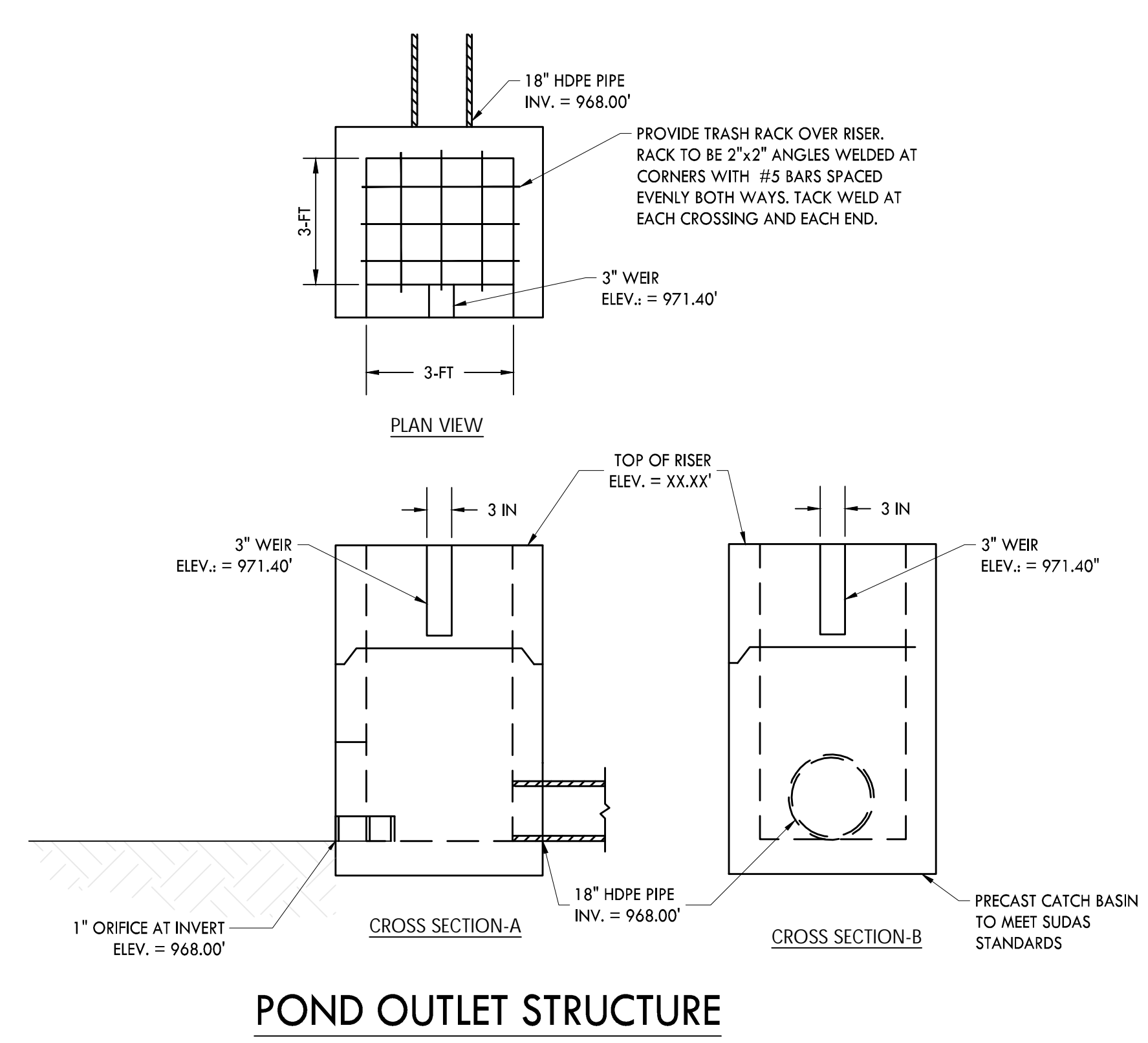
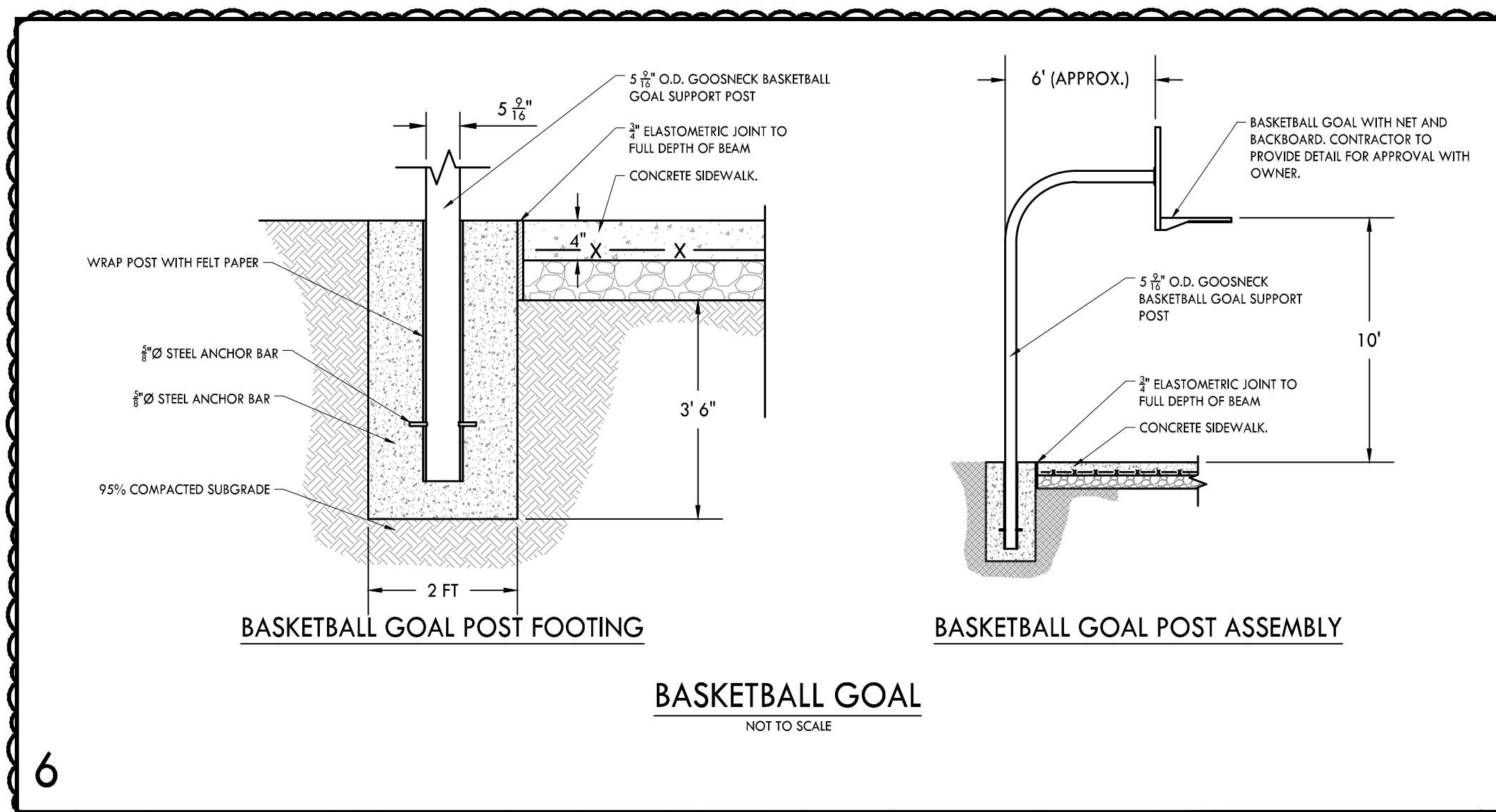


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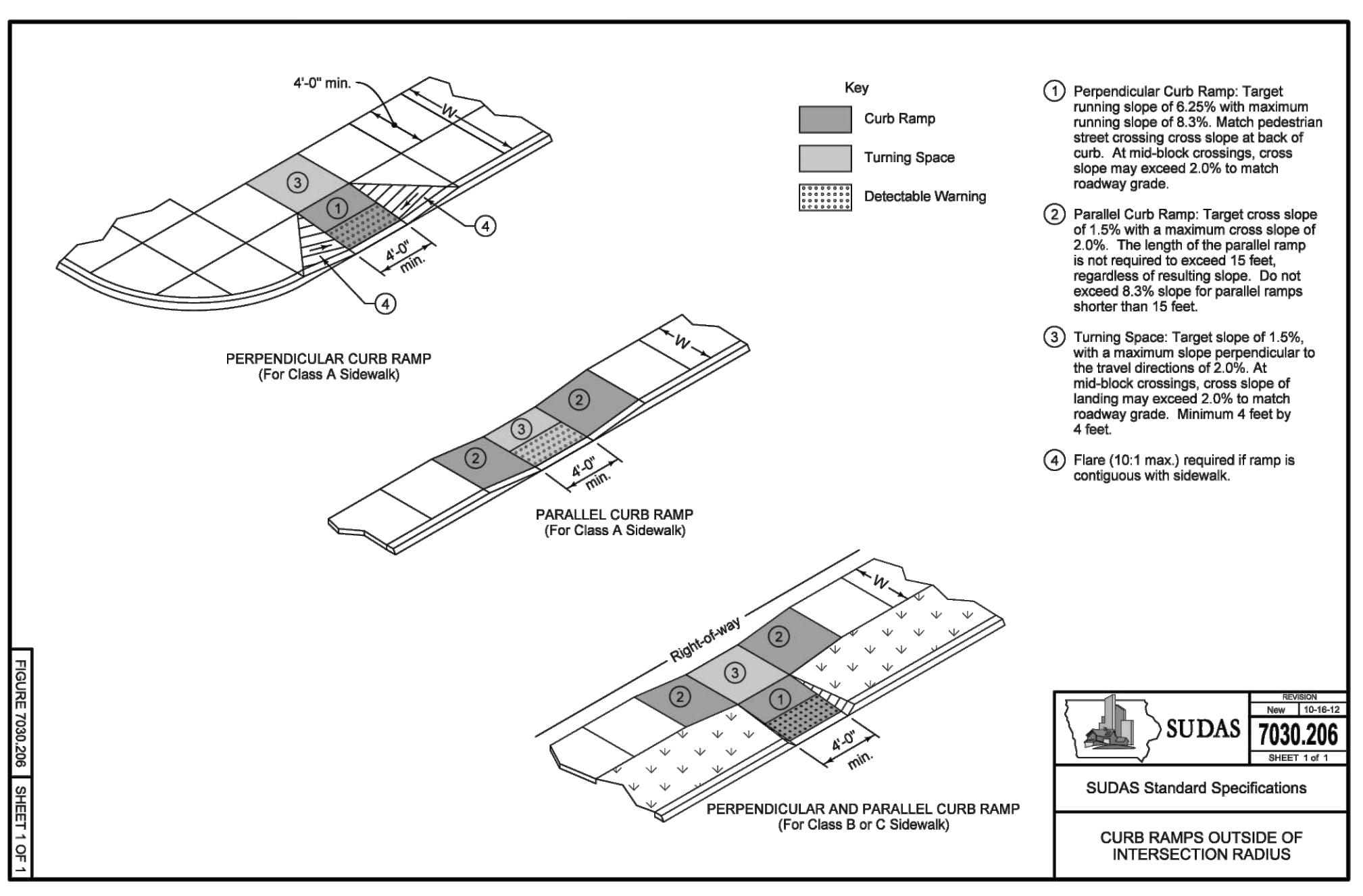
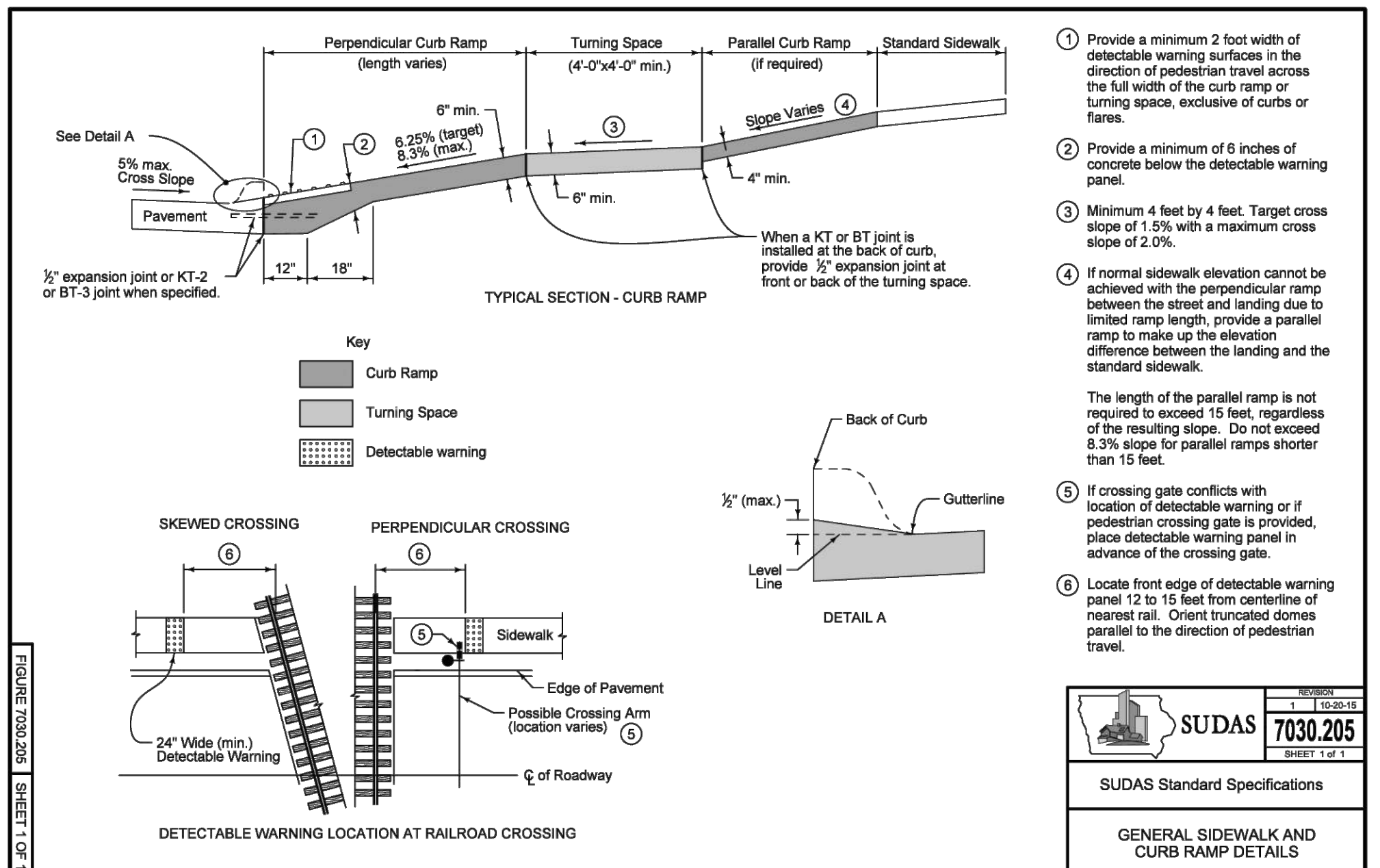
**C8.2**

CONSTRUCTION DOCUMENTS



**NOTES:**

1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONSULTANT TO SELECT COLOR (FINISH). SEE MANUFACTURER'S SPECIFICATIONS.
4. SEE SITE PLAN FOR LOCATION OR CONSULT OWNER.
5. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
6. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT [www.CADDetails.com/info](http://www.CADDetails.com/info) REFERENCE NUMBER 302-145A.



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