



GREAT LAKES CHEESE

WASTEWATER TREATMENT BUILDING

2200 ENTERPRISE AVENUE

LA CROSSE, WI 54603

RELEASE	A	06/29/2018	BSF	BY	APP.	PLANNING REVIEW
						RELEASED FOR...

PLANNING REVIEW

RELEASED: MAY 23, 2018

DRAWING LIST	
SHEET NO.	SHEET TITLE
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SOURCE URL: <http://gis.lacrossecounty.org/taxparcelviewer/>

1 VICINITY MAP
SCALE: NTS



LOCAL UTILITY LOCATING AGENCY



ALL CONTRACTORS SHALL NOTIFY UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING OF THE INTENT TO EXCAVATE NO LESS THAN 72 HOURS PRIOR TO SUCH EXCAVATION (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND HOLIDAYS).

EXISTING UTILITY LOCATIONS SHOWN SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. LOCATIONS OF UNDERGROUND UTILITIES ON THESE DRAWINGS ARE APPROXIMATE ONLY AND BASED ON ACTUAL FIELD LOCATIONS OF VISIBLE STRUCTURES AND PLAN COMPUTATIONS.

DESIGN TEAM

ARCHITECT

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

CIVIL ENGINEER

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

STRUCTURAL ENGINEER

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MECHANICAL ENGINEER

THE DENNIS GROUP, LLC
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ELECTRICAL ENGINEER

THE DENNIS GROUP, LLC
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PLUMBING ENGINEER

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

FIRE PROTECTION ENGINEER

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

OWNER / DEVELOPER:
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2200 ENTERPRISE AVENUE
LA CROSSE, WI 54603
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GREAT LAKES CHEESE
2200 ENTERPRISE AVENUE
LA CROSSE, WISCONSIN



COVER SHEET

DENNIS GROUP
Plan • Design • Engineer • Build • Start-Up

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CIVIL ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS MAY BE USED.

ACOMP	ASPHALT COATED CORRUGATED METAL PIPE
ADA	AMERICANS WITH DISABILITIES ACT
ARCH	ARCHITECTURAL
BC	BOTTOM OF CURB
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BW	BOTTOM OF WALL
BWL	BROKEN WHITE LINE
⊙	CENTER LINE
CB	CATCH BASIN
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
CONC	CONCRETE
CONST.	CONSTRUCTION
CONT	CONTINUOUS
DEP	DEPARTMENT OF ENVIRONMENTAL PROTECTION
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DMH	DRAINAGE MANHOLE
DOT	DEPARTMENT OF TRANSPORTATION
ECB	EROSION CONTROL BLANKET
ELEC	ELECTRICAL
ELEV	ELEVATION
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPSC	EROSION PROTECTION AND SEDIMENTATION CONTROL
EX	EXISTING
EXST	EXISTING
FD	FOUNDATION DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FES	FLARED END SECTION
FFE	FINISHED FLOOR ELEVATION
FT	FEET
FTG	FOOTING
HC	HANDICAP
HDPE	HIGH DENSITY POLYETHYLENE
HYD	HYDRANT
INV	INVERT
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MEG	MATCH EXISTING GRADE
MH	MANHOLE
MIN	MINIMUM
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
⊕	PROPERTY LINE
PE	POLYETHYLENE
PERF	PERFORATED
PIV	POST INDICATOR VALVE
PROP.	PROPOSED
PVC	POLYVINYL CHLORIDE
PW	PROCESS WASTE (INDUSTRIAL WASTE)
PWMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RECP	ROLLED EROSION CONTROL PRODUCT
REQ'D	REQUIRED
ROW	RIGHT-OF-WAY
SAN	SANITARY
SD	STORM DRAINAGE
SDYL	SOLID DOUBLE YELLOW LINE
SF	SQUARE FEET
SIM	SIMILAR
STL	STEEL
STM	STORM
STRUCT	STRUCTURAL
SWL	SOLID WHITE LINE
SYL	SOLID YELLOW LINE
TC	TOP OF CURB
TD	TRENCH DRAIN
TEL	TELEPHONE
TF	TOP OF FRAME
TW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
YD	YARD DRAIN

CIVIL LEGEND

NOTE: NOT ALL SYMBOLS MAY BE USED.

EXISTING	PROPOSED

GENERAL NOTES

- EXISTING CONDITIONS PLAN AND TOPOGRAPHY FROM FIELD SURVEY PERFORMED BY PARAGON ASSOCIATES OF LA CROSSE, WI IN FALL 2015. TEMPORARY BENCHMARKS ARE LOCATED ON THE PLANS WITH DESCRIPTIONS AND ELEVATIONS.
- ELEVATIONS ON ALL SHEETS AREA BASED ON LA CROSSE COUNTY GPS HARN POINT LA CROSSE ELEVATION 716.19 (NAVD88 DATUM).
- ALL CONSTRUCTION SHALL COMPLY WITH THE PROJECT SPECIFICATIONS, CITY OF LA CROSSE SPECIFICATIONS, AND WISCONSIN DOT SPECIFICATIONS IN THE ABOVE REFERENCED HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MOST STRINGENT SPECIFICATION SHALL APPLY.
- THE OWNER SHALL ENGAGE THE SERVICES OF A THIRD-PARTY MATERIALS TESTING AGENCY AND GEOTECHNICAL ENGINEER TO CONDUCT INSPECTIONS AND TESTING. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTIONS THROUGH THE CONSTRUCTION MANAGER OR OWNER'S REPRESENTATIVE, AND PROVIDE 48 HOURS NOTICE FOR TESTS AND INSPECTIONS. IF MATERIALS PLACED BY CONTRACTOR FAIL INSPECTION, THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH SUBSEQUENT TESTING AND INSPECTION UNTIL MATERIAL PASSES.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE AHJ PRIOR TO CONSTRUCTION, INCLUDING WORK WITHIN COUNTY OR STATE ROADWAYS AND/OR RIGHT-OF-WAYS. CONTRACTOR SHALL OBTAIN PERMITS AND PAY ASSOCIATED FEES TO PERFORM ALL WORK, INCLUDING FOR STREET REPAIR AND REPLACEMENT, TRENCHING, AND CONNECTION TO EXISTING UTILITIES. CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE, AND PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC IN ACCORDANCE WITH THE REQUIREMENTS OF THE AHJ.
- THE CONTRACTOR IS HEREBY ADVISED THAT ALL LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS, AND UNDERGROUND STRUCTURES ARE NOT WARRANTED TO BE CORRECT NOR ACCURATE AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN SHOWN. LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS AS REPRESENTED BY UTILITY DRAWINGS, THEREFORE THEIR ACTUAL LOCATIONS MAY VARY. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR SHALL MAKE EXAMINATIONS IN THE FIELD BY VARIOUS AVAILABLE METHODS AND SHALL OBTAIN INFORMATION FROM UTILITY COMPANIES AND INDIVIDUALS AS TO THE LOCATION OF ALL SUB-SURFACE STRUCTURES. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR EXCAVATE IN ANY AREA PRIOR TO A SIGNED CONTRACT AND NOTICE TO PROCEED.
- THE CONTRACTOR IS HEREBY REMINDED THAT "CALL BEFORE YOU DIG" MARK-OUTS BY THE APPROPRIATE UTILITY COMPANY ARE REQUIRED. CONTRACTOR SHALL CALL DIGGERS HOTLINE, INC. 1-800-242-8511 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- UTILITIES IN AREAS OUTSIDE THE LIMITS OF "CALL BEFORE YOU DIG" MARK-OUTS SHALL BE LOCATED BY PRIVATE UTILITY LOCATING COMPANY. CONTRACTOR SHALL BEAR ALL COSTS FOR UTILITY LOCATING.
- "UTILITY IDENTIFICATION TAPE": AFTER PLACING APPROXIMATELY 2 FEET OF BACKFILL MATERIAL OVER ALL UTILITY PIPING, INCLUDING EXISTING PIPING, THE CONTRACTOR SHALL PLACE A 6-INCH WIDE NON-DETECTABLE STRIP OR DURABLE, COLOR CODED (RED FOR ELECTRIC; YELLOW FOR GAS OR OIL; ORANGE FOR COMMUNICATIONS; BLUE FOR WATER; GREEN FOR SANITARY AND STORM SEWER) UNDERGROUND UTILITY IDENTIFICATION TAPE IMPRINTED WITH AN APPROPRIATE WARNING INDICATING THE PRESENCE OF THE BURIED UTILITY.
- GAS MAINS AND TELEPHONE LINES ARE ASSUMED TO HAVE THREE (3) FEET OF COVER UNLESS SHOWN OTHERWISE.
- WATER MAINS ARE ASSUMED TO HAVE SEVEN (7) FEET OF COVER FOR PIPES TWELVE (12) INCHES OR LESS, AND SIX (6) FEET OF COVER FOR PIPES GREATER THAN TWELVE (12) INCHES, UNLESS SHOWN OTHERWISE.
- GAS MAIN AND SERVICE RELOCATION WORK, IF NECESSARY, WILL BE COORDINATED WITH ENGINEER AND CONTRACTOR, AND WILL BE PERFORMED BY CONNECTICUT NATURAL GAS COMPANY AT THE OWNERS EXPENSE. TEST PITS SHALL BE PERFORMED PRIOR TO PIPE INSTALLATION FOR SUSPECT GAS MAIN AND SERVICE CONFLICTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORT AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES, AS WELL AS ANY REPAIR AND/OR REPLACEMENT COSTS OF UTILITIES DAMAGED DURING CONSTRUCTION WHETHER ABOVE OR BELOW GRADE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL UTILITY RELOCATION WORK. CLAIMS FOR EXTRAS WILL NOT BE ALLOWED FOR DELAY OR WORK DUE TO UTILITY COMPANY COORDINATION OR UTILITY RELOCATION WORK.
- CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER OF ANY SUBSURFACE UTILITY OR OTHER PIPE NOT SHOWN ON THE DRAWINGS THAT IS ENCOUNTERED DURING CONSTRUCTION. HORIZONTAL LOCATION AND ELEVATION SHALL BE ELECTRONICALLY SURVEYED, AND SUBMITTED TO ENGINEER IN THE SAME COORDINATE SYSTEM THAT THE CONTRACT DRAWINGS WERE PRODUCED.
- CONTRACTOR AND THEIR PERSONNEL SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL REQUIREMENTS FOR SAFETY WHEN IN CONFINED SPACES. ALSO REFER TO RECOMMENDATIONS IN THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH PUBLICATION NO. 80-106, "WORKING IN CONFINED SPACES".
- CONTRACTOR SHALL COMPLY WITH CFR29 PART 1926 FOR EXCAVATION, TRENCHING, AND TRENCH PROTECTION REQUIREMENTS.
- EXCAVATION EXCEEDING 20- FEET IN DEPTH REQUIRES THE DESIGN OF A TRENCH SAFETY SYSTEM DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE IN WHICH THE WORK IS TO BE PERFORMED.
- CONTRACTOR SHALL ADHERE TO ALL OSHA, FEDERAL, AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN PROXIMITY OF OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES CONTACT ELECTRIC COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. CONTRACTOR SHALL PAY ANY ASSOCIATED FEES CHARGED BY THE ELECTRIC COMPANY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING FLOWS IN SANITARY SEWERS, STORM DRAINAGE SYSTEMS, AND FOR OBTAINING ALL PERMITS, AS SPECIFIED.
- ALL DEWATERING SHALL BE DIRECTED TO COMBINED OR SANITARY SEWERS AT LOCATIONS AS APPROVED BY THE ENGINEER. DO NOT DISCHARGE GROUND WATER TO STORM DRAINS. ALL DEWATERING ACTIVITIES SHALL COMPLY WITH THE TECHNICAL SPECIFICATIONS AND STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS. THE CONTRACTOR SHALL NOT COMMENCE DEWATERING DISCHARGE WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE ENGINEER OR OWNER, AS SPECIFIED.
- NOT ALL TEST PIT LOCATIONS ARE SHOWN ON THE PLANS. EXCAVATE TEST PITS IN LOCATIONS AS DIRECTED BY THE ENGINEER. TEST PITS SHALL BE DUG TO ADJUST PIPING AS REQUIRED BY THE ENGINEER.
- ALL PIPE SECTIONS SHOWING LENGTHS IN LINEAR FEET ARE TWO-DIMENSIONAL MEASUREMENTS TAKEN FROM CENTER TO CENTER OF EACH ADJOINING MANHOLE OR STRUCTURE.
- UNLESS OTHERWISE NOTED, PVC PIPE SHALL BE SDR 35, DI PIPE FOR SEWER SHALL BE CLASS 52 LINED WITH PROTECTO 401 INTERIOR COATING, DI PIPE FOR WATER SHALL BE CLASS 54 AND RC PIPE SHALL BE CLASS IV.
- SILT SACKS SHALL BE PLACED AROUND ALL CATCH BASINS SUBJECT TO RUNOFF FROM CONSTRUCTION AREAS.
- AT CONNECTION BETWEEN EXISTING AND NEW PIPES, SLEEVES, NIPPLES AND ACCESSORIES NECESSARY FOR MAKING CONNECTIONS MAY NOT BE SHOWN IN THE DETAILS. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS AS NECESSARY FOR CONNECTING TO EXISTING PIPES AND AS INDICATED IN THE SPECIFICATIONS.
- CONTRACTOR SHALL PROVIDE THE OWNER, LOCAL FIRE/POLICE AUTHORITIES, SCHOOL DEPARTMENT, LOCAL BUSINESSES AND PUBLIC TRANSPORTATION AGENCIES A DETAILED PLAN OF APPROACH INDICATING METHODS OF PROPOSED TRAFFIC ROUTING WHEN WORKING IN THE PUBLIC WAY. COMMUNICATION WITH DEPARTMENTS, LOCAL BUSINESSES AND PUBLIC TRANSPORTATION AGENCIES SHALL BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, UTILITY, PIPE, PAVEMENT, CURBS, SIDEWALKS, DRAINAGE STRUCTURE, SWALE, OR LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE OWNER, MUNICIPALITY, OR STATE DOT.
- CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED OR ORDERED BY THE ENGINEER OR REQUIRED BY THE AHJ. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL FROM THE APPROPRIATE GOVERNING AGENCY IS GRANTED.
- CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS, AND PROPERTY CORNERS DURING CONSTRUCTION. ANY DISTURBED BOUNDARY MARKERS SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
- CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF ALL CONSTRUCTION, INCLUDING UNDERGROUND UTILITIES, TO THE ENGINEER AT THE END OF CONSTRUCTION.

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LA CROSSE, WISCONSIN



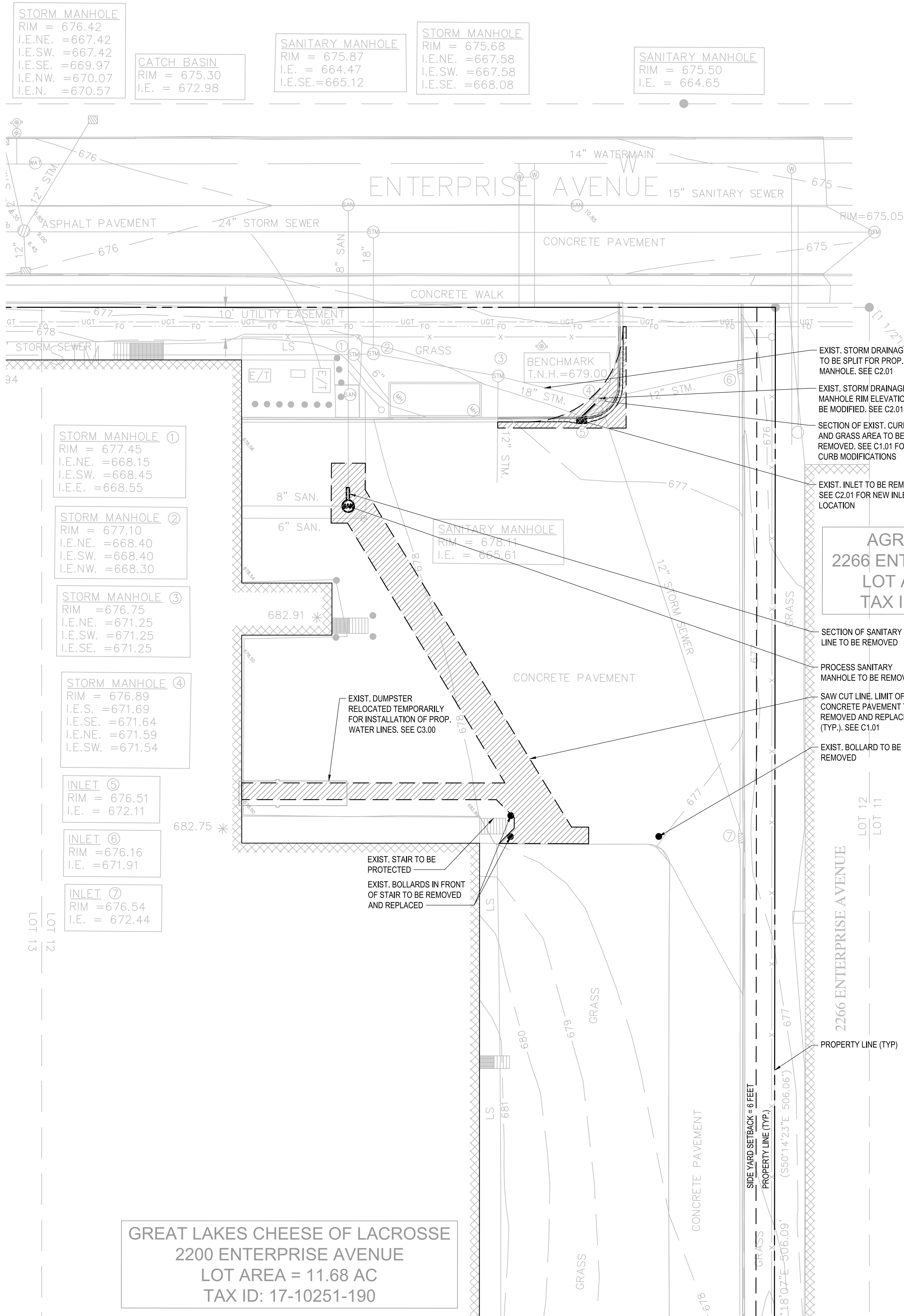
ABBREVIATIONS, LEGEND, AND GENERAL NOTES

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STORM MANHOLE
RIM = 676.42
I.E.NE. = 667.42
I.E.SW. = 667.42
I.E.SE. = 669.97
I.E.NW. = 670.07
I.E.N. = 670.57

CATCH BASIN
RIM = 675.30
I.E. = 672.98

SANITARY MANHOLE
RIM = 675.87
I.E. = 664.47
I.E.SE. = 665.12

STORM MANHOLE
RIM = 675.68
I.E.NE. = 667.58
I.E.SW. = 667.58
I.E.SE. = 668.08

SANITARY MANHOLE
RIM = 675.50
I.E. = 664.65

STORM MANHOLE ①
RIM = 677.45
I.E.NE. = 668.15
I.E.SW. = 668.45
I.E.E. = 668.55

STORM MANHOLE ②
RIM = 677.10
I.E.NE. = 668.40
I.E.SW. = 668.40
I.E.NW. = 668.30

STORM MANHOLE ③
RIM = 676.75
I.E.NE. = 671.25
I.E.SW. = 671.25
I.E.SE. = 671.25

STORM MANHOLE ④
RIM = 676.89
I.E.S. = 671.69
I.E.SE. = 671.64
I.E.NE. = 671.59
I.E.SW. = 671.54

INLET ⑤
RIM = 676.51
I.E. = 672.11

INLET ⑥
RIM = 676.16
I.E. = 671.91

INLET ⑦
RIM = 676.54
I.E. = 672.44

EXIST. STORM DRAINAGE LINE TO BE SPLIT FOR PROP. MANHOLE. SEE C2.01
EXIST. STORM DRAINAGE MANHOLE RIM ELEVATION TO BE MODIFIED. SEE C2.01
SECTION OF EXIST. CURB AND GRASS AREA TO BE REMOVED. SEE C1.01 FOR CURB MODIFICATIONS
EXIST. INLET TO BE REMOVED. SEE C2.01 FOR NEW INLET LOCATION

AGROPUR MSI LLC
2266 ENTERPRISE AVENUE
LOT AREA = 3.79 AC
TAX ID: 17-10251-210

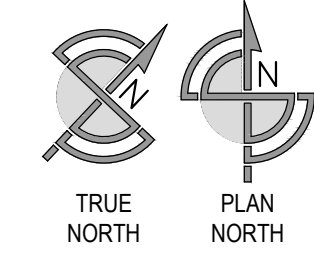
SECTION OF SANITARY LINE TO BE REMOVED
PROCESS SANITARY MANHOLE TO BE REMOVED
SAW CUT LINE. LIMIT OF CONCRETE PAVEMENT TO BE REMOVED AND REPLACED (TYP.). SEE C1.01
EXIST. BOLLARD TO BE REMOVED

EXIST. STAIR TO BE PROTECTED
EXIST. BOLLARDS IN FRONT OF STAIR TO BE REMOVED AND REPLACED

EXIST. DUMPSTER RELOCATED TEMPORARILY FOR INSTALLATION OF PROP. WATER LINES. SEE C3.00

GREAT LAKES CHEESE OF LACROSSE
2200 ENTERPRISE AVENUE
LOT AREA = 11.68 AC
TAX ID: 17-10251-190

1 EXISTING CONDITIONS AND DEMOLITION PLAN
SCALE: 1" = 20'



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GREAT LAKES CHEESE
2200 ENTERPRISE AVENUE
LA CROSSE, WISCONSIN

EXISTING CONDITIONS AND DEMOLITION PLAN

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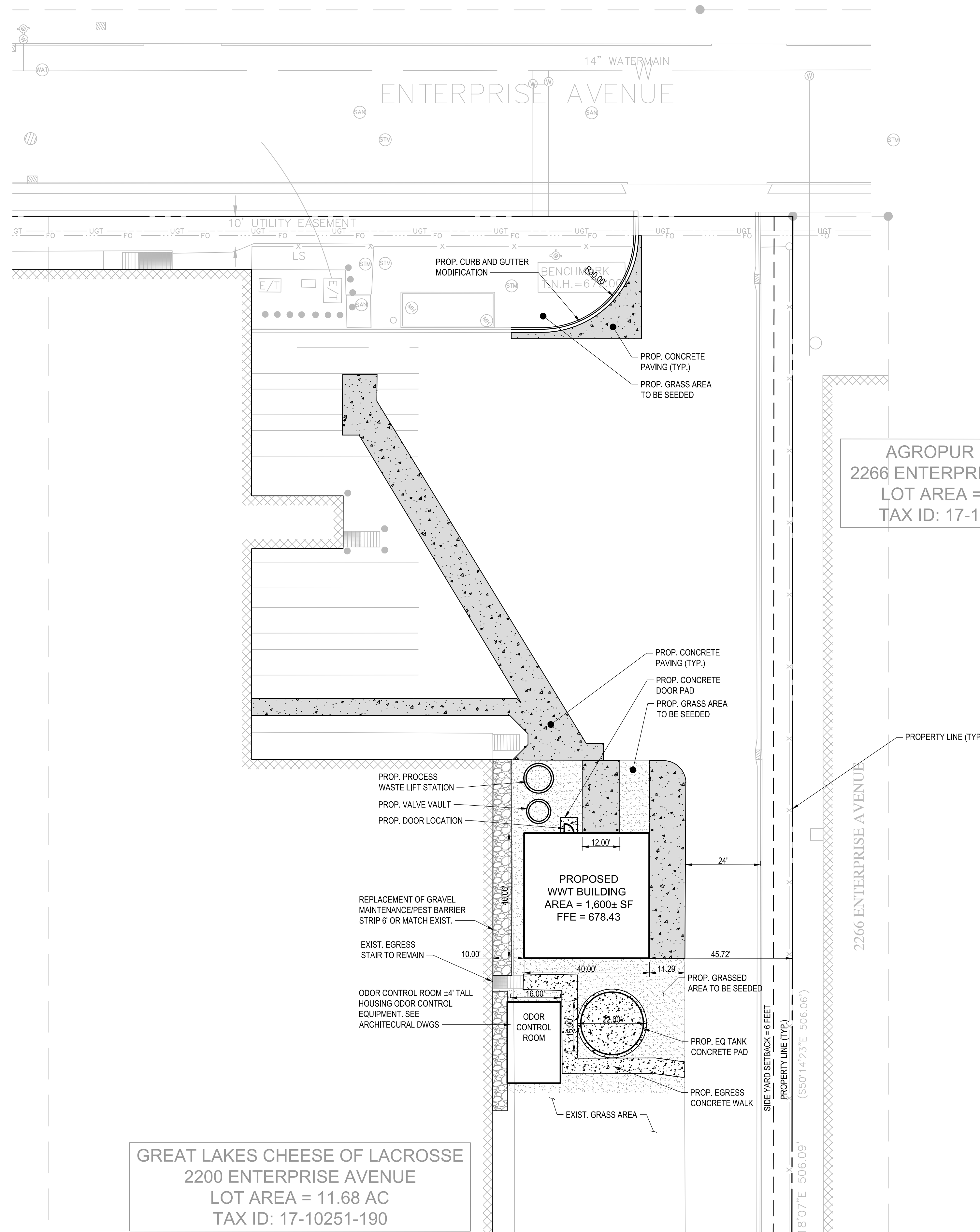
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SITE PLAN NOTES

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS AND PLAN SPECIFICATIONS TO THE OWNER AND SITE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
2. ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
3. TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. SIGNS SHALL BE INSTALLED PLUMB WITH 2-FOOT HORIZONTAL CLEARANCE FROM THE EDGE OF SIGN TO FACE OF THE CURB OR EDGE OF TRAVEL WAY, 7-FOOT VERTICAL CLEARANCE FROM EXISTING GRADE UNLESS OTHERWISE DETAILED OR NOTED.
4. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED.
5. THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PAINT MIXTURE PRIOR TO STRIPING.
6. PAVEMENT MARKING KEY:
 - a. 4" SDYL = 4-INCH WDE SOLID DOUBLE YELLOW LINE
 - b. 4" SYL = 4-INCH WIDE SOLID YELLOW LINE
 - c. 4" SWL = 4-INCH WIDE SOLID WHITE LINE
 - d. 12" SWSB = 12-INCH SOLID WHITE STOP BAR
 - e. 4" BWL = 4" WIDE WHITE LINE 10' STRIPE, 30' SPACE
7. FIRE LANES SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT CITY DISTRICT FIRE MARSHAL.
8. ALL HANDICAP ACCESSIBLE SITE FEATURES SHALL BE CONSTRUCTED TO MEET ALL FEDERAL, STATE, AND LOCAL CODES.
9. DO NOT SCALE DRAWINGS AS THEY ARE REPRODUCTIONS AND SUBJECT TO DISTORTION.
10. LANDSCAPE PLANTINGS AND SITE SIGN LOCATIONS AT ENTRANCES/EXITS SHALL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCES/EXITS LOCATIONS, PER STATE AND LOCAL STANDARDS.
11. ANY AND ALL QUANTITIES SHOWN OR IMPLIED ON THESE DRAWINGS ARE FOR ESTIMATION PURPOSES ONLY.
12. SEE SHEET C0.01 FOR GENERAL NOTES.



GREAT LAKES CHEESE OF LACROSSE
 2200 ENTERPRISE AVENUE
 LOT AREA = 11.68 AC
 TAX ID: 17-10251-190

AGROPUR MSI LLC
 2266 ENTERPRISE AVENUE
 LOT AREA = 3.79 AC
 TAX ID: 17-10251-210

1 SITE PLAN
 SCALE: 1" = 20'

TRUE NORTH
 PLAN NORTH

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A	05/23/2018	BSF				

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SITE PLAN

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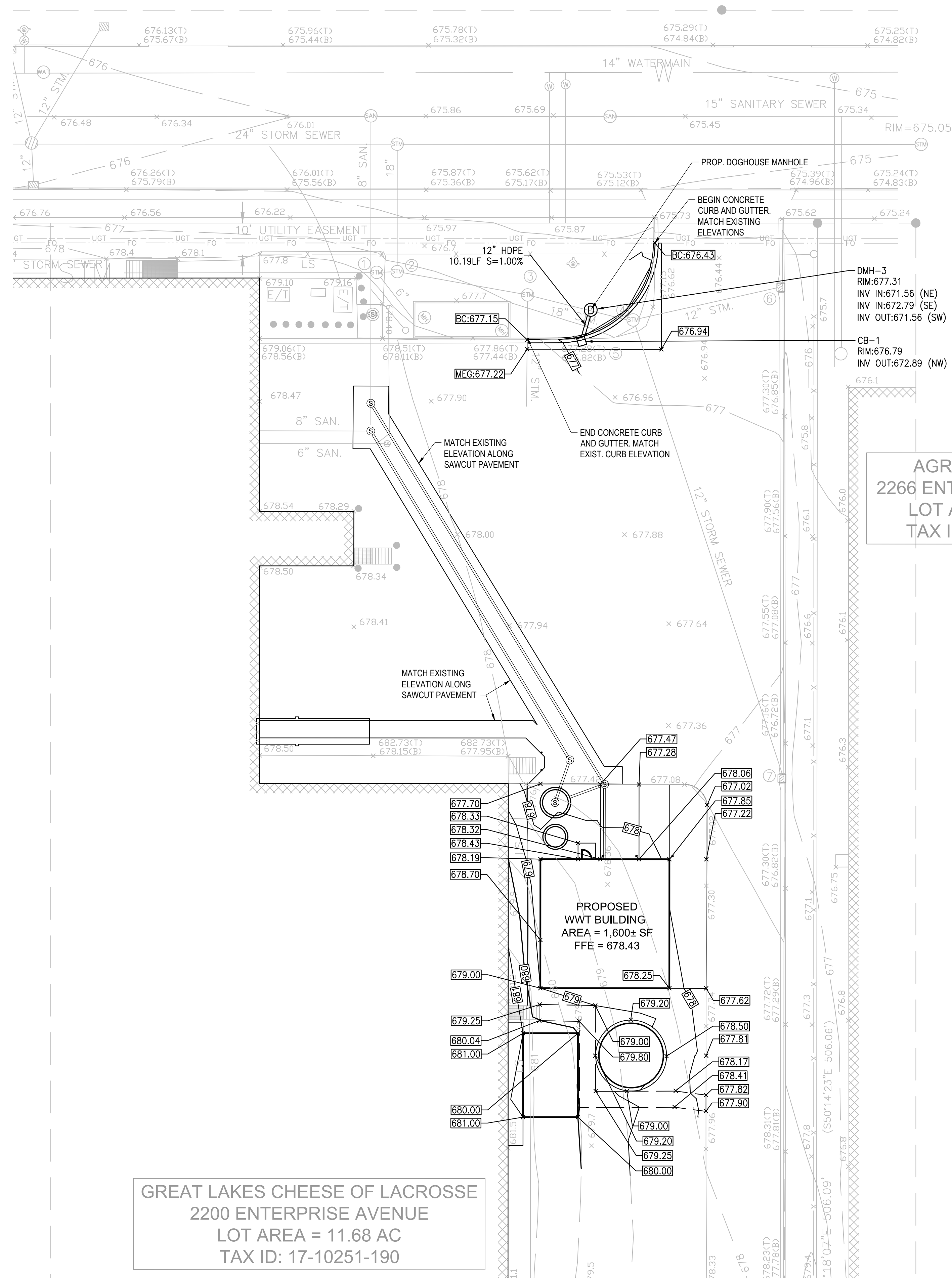
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GRADING AND DRAINAGE NOTES

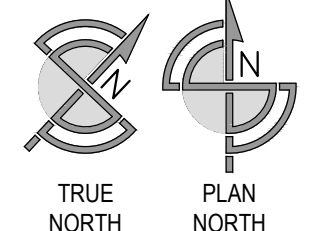
1. EARTH MOVING SHALL CONFORM TO THE REQUIREMENTS OF THE GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS.
2. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AT ALL LOCATIONS.
3. WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT, MEET LINE AND GRADE OF EXISTING PAVEMENT.
4. CONTRACTOR SHALL BLEND NEW GRADES SMOOTHLY INTO EXISTING GRADES.
5. PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM OF 1/8" PER FOOT UNLESS OTHERWISE NOTED.
6. ALL PROPOSED TOP OF CURB ELEVATIONS ARE 6-INCHES ABOVE BOTTOM OF CURB UNLESS OTHERWISE NOTED. REFER TO DRAWINGS FOR LENGTHS OF FLUSH (DEPRESSED) CURB, TRANSITION CURB, MOUNTABLE CURB, AND STANDARD VERTICAL CURB.
7. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING.
8. ALTERATIONS TO THE GRADING AND DRAINAGE SHOWN ON DRAWINGS SHALL BE DOCUMENTED IN THE 'AS-BUILT' DRAWINGS, WHICH ARE TO BE MAINTAINED BY THE CONTRACTOR.



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1 GRADING AND DRAINAGE PLAN
 SCALE: 1" = 20'



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 LA CROSSE, WISCONSIN

GRADING AND DRAINAGE PLAN

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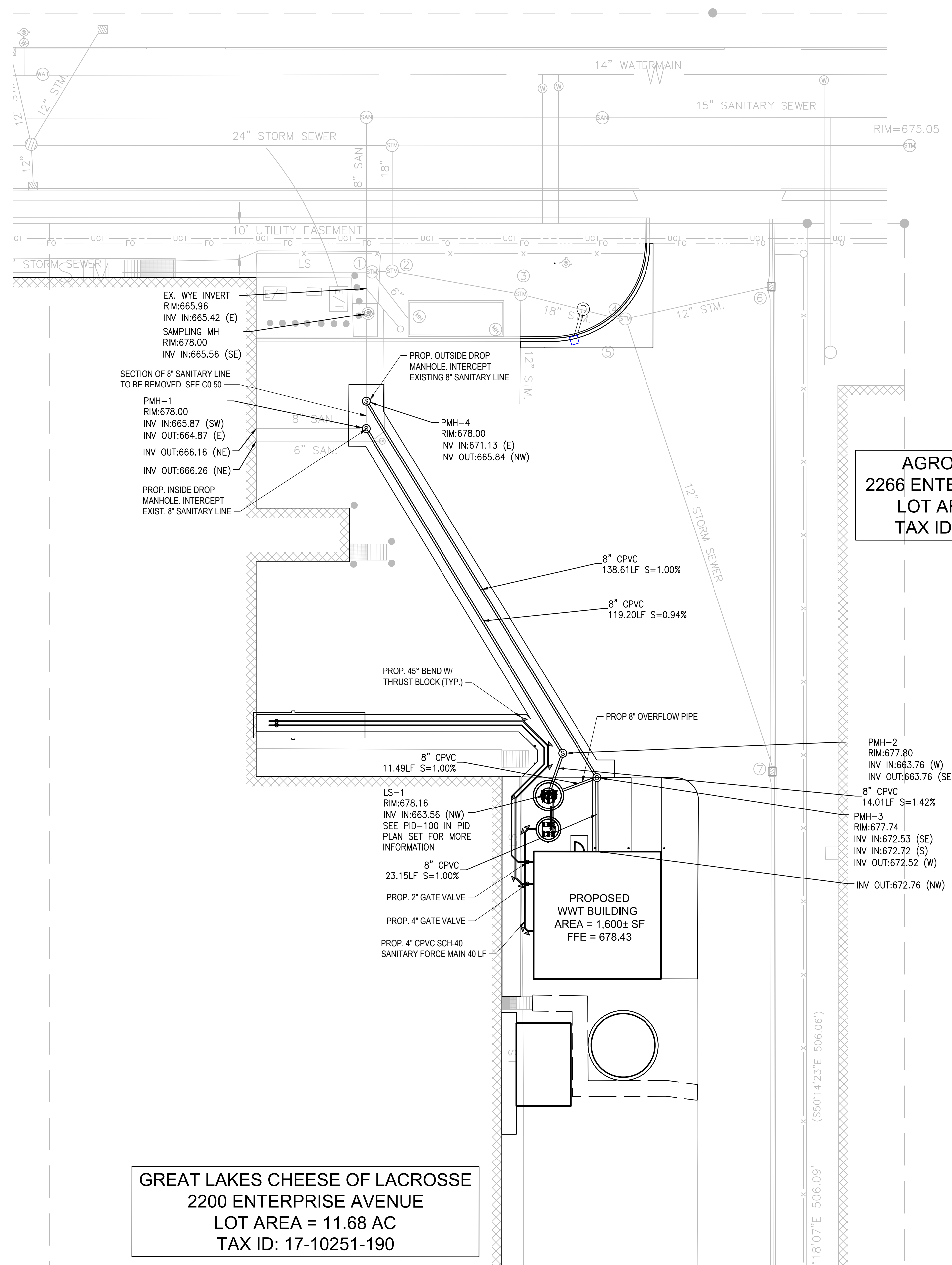
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SITE UTILITY NOTES

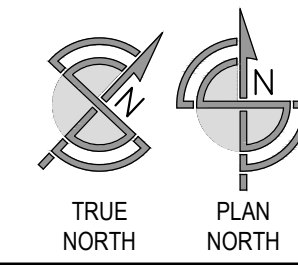
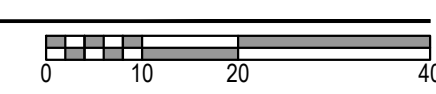
- CONTRACTOR SHALL FIELD VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE SEWERS CROSS-EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- DRAWINGS SHOW PIPES UP TO 5- FEET FROM THE FACE OF BUILDING. REFER TO DRAWINGS BY OTHERS FOR BUILDING CONNECTIONS. CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY COMPANY AND AHJ STAFF REVIEW.
- CONTRACTOR SHALL ENSURE THAT ALL UTILITY COMPANIES AND CITY OF LA CROSSE STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY COMPANY.
- CONTRACTOR SHALL ARRANGE FOR AND COORDINATE SERVICE INSTALLATIONS AND CONNECTIONS WITH THE RESPECTIVE UTILITY COMPANIES. THE CONTRACTOR SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, REMOVALS, RELOCATIONS, AND INSPECTIONS.
- SANITARY SEWER PIPING SHALL MAINTAIN 10' MIN. HORIZONTAL 1.5' VERTICAL MIN. SEPARATION DISTANCE FROM POTABLE WATER LINES, OR ADDITIONAL PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED.
- RELOCATION OF UTILITY COMPANY INFRASTRUCTURE SUCH AS POLES, HANDHOLES, VAULTS, ETC., SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY. CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH WORK TO BE PERFORMED BY UTILITY COMPANY.
- CONTRACTOR TO PROVIDE SLEEVES UNDER FOOTINGS FOR UTILITY CONNECTIONS.
- UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE MEP DRAWINGS AND CONSTRUCTION MANAGER.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANY AND/OR THE LOCAL MUNICIPALITIES' REQUIREMENTS.
- A ONE-FOOT MINIMUM CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM SEWERS SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM AND SANITARY SEWER WITH A CONCRETE ENCASEMENT.
- CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/FOOTING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
- MANHOLE FRAMES AND COVERS, DRAINAGE INLET FRAMES AND GRATES, VALVE BOXES, AND CLEANOUT FRAMES AND COVERS SHALL BE RESET TO BE FLUSH WITH FINISHED GRADES.
- THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY COMPANIES AND THE CITY OF LA CROSSE FOR WORK TO BE PERFORMED BY UTILITY COMPANIES OR BY THE CITY OF LA CROSSE. THE CONTRACTOR SHALL PAY ALL UTILITY FEES AND REPAIR PAVEMENT AS NECESSARY.
- ALL WATER LINES TO HAVE A MINIMUM COVER OF FIVE (5) FEET.
- ALL WATER MAINS, WATER SERVICES AND SANITARY SEWER LATERAL SHALL CONFORM TO THE LA CROSSE WATER AND SEWER COMMISSION SPECIFICATIONS, AS WELL AS TO OTHER APPLICABLE CODES AND SPECIFICATIONS FOR POTABLE WATER SYSTEMS.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS UNTIL AUTHORIZED TO DISCONNECT BY THE OWNER, ENGINEER, UTILITY COMPANY OR AHJ.
- MINIMUM SANITARY SEWER SLOPES SHALL BE $-1/4'$ PER FOOT FOR 4" DIAMETER SERVICES AND SMALLER AND $-1/8'$ PER FOOT FOR 6" DIAMETER SERVICES AND LARGER, UNLESS MORE STRINGENT REGULATIONS APPLY.
- SEWAGE CONTAINING FATS, OILS, OR GREASE IS NOT ALLOWED TO BYPASS A GREASE TRAP.
- CONTRACTOR SHALL GUARANTEE, FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE SYSTEM BY THE OWNER, EACH AND EVERY PIECE OF MATERIAL OR EQUIPMENT WHICH HAS BEEN INSTALLED UNDER THIS CONTRACT.



AGROPUR MSI LLC
 2266 ENTERPRISE AVENUE
 LOT AREA = 3.79 AC
 TAX ID: 17-10251-210

GREAT LAKES CHEESE OF LACROSSE
 2200 ENTERPRISE AVENUE
 LOT AREA = 11.68 AC
 TAX ID: 17-10251-190

1 SITE UTILITY PLAN
 SCALE: 1" = 20'



FILE PATH: G:\5590\dwg\CHEESE\C3.dwg PLOT DATE: 02/20/18 PLOT TIME: 1:37:53 PM

PLANNING REVIEW	RELEASED FOR...
CGI	BY APP.
BSF	DATE
A	02/20/18

GREAT LAKES CHEESE
 2200 ENTERPRISE AVENUE
 LA CROSSE, WISCONSIN

SITE UTILITY PLAN

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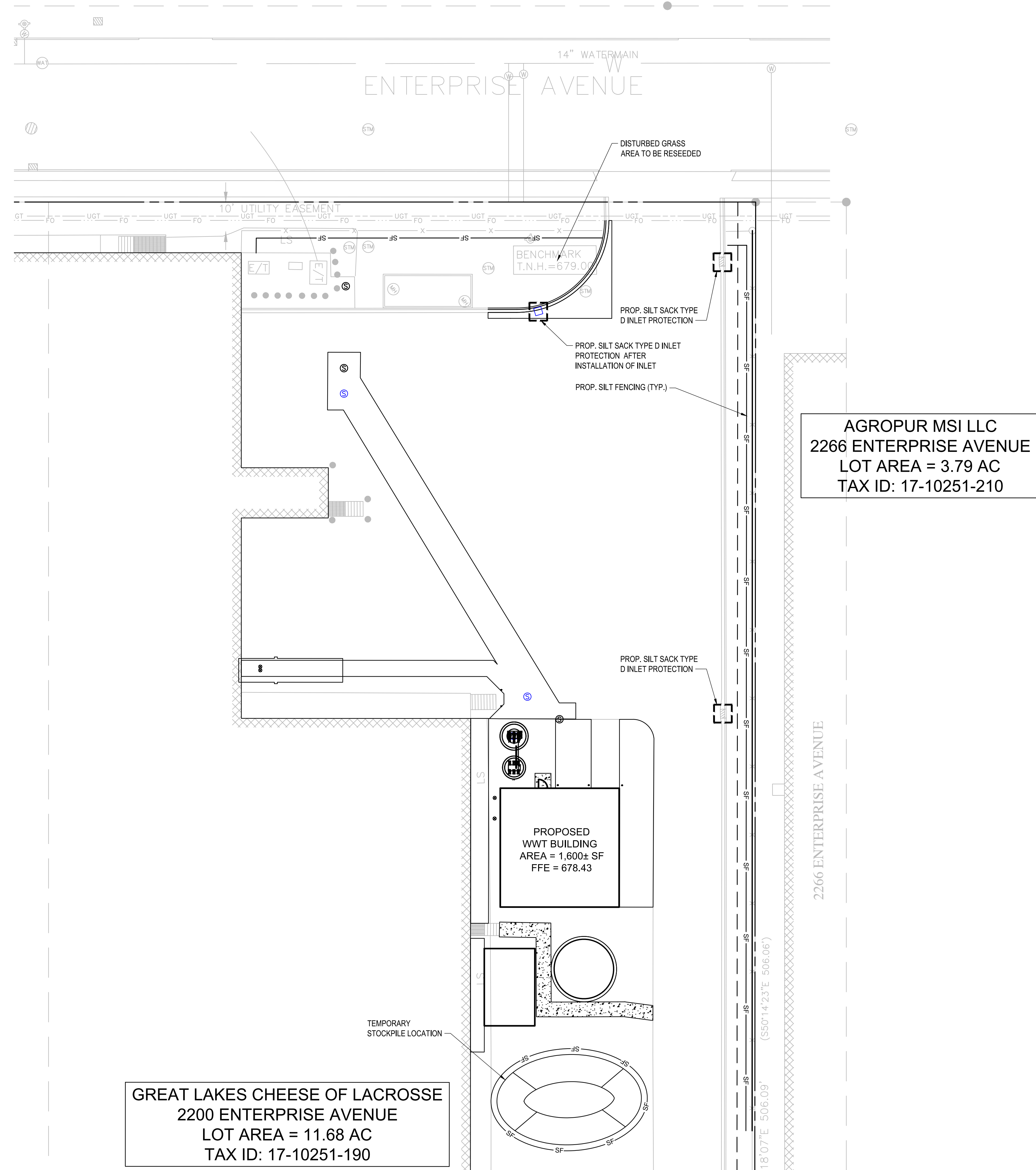
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EROSION CONTROL NOTES

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. EROSION CONTROLS TO BE INSTALLED AT THE EDGE OF PROPOSED WORK. EROSION CONTROLS TO ACT AS A LIMIT OF WORK LINE TO ENSURE THAT NO EQUIPMENT ENCLOSES ON TO ADJACENT PROPERTIES.
3. EROSION CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED FOR THE DURATION OF THE PROJECT TO LIMIT THE MOVEMENT OF SILTATION AND SEDIMENTS FROM ENTERING EXISTING DRAINAGE SYSTEMS OR FROM LEAVING THE PARCEL. ANY ACCUMULATED SEDIMENTS ARE TO BE REMOVED FROM THE EROSION CONTROLS AND DISPOSED TO PROPERLY. ADDITIONALLY, ALL EROSION CONTROLS ARE TO BE INSPECTED AFTER A STORM EVENT AND THE CONTROLS REPLACED OR ARMORED AS NECESSARY AND ACCUMULATED SEDIMENTS REMOVED.
4. ADDITIONAL EROSION CONTROLS ARE TO BE UTILIZED AS NECESSARY AND AS DIRECTED BY THE ENGINEER TO LIMIT SEDIMENTS FROM DISCHARGING TO ADJACENT PROPERTIES OR INTO EXISTING STORM DRAIN SYSTEMS.
5. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT EROSION SHALL NOT AFFECT ON-SITE REGULATED AREAS (WETLANDS, ETC) AND OFF-SITE AREAS, WHETHER SUCH EROSION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
6. A RESERVE AMOUNT OF EROSION CONTROL MATERIALS ARE TO BE KEPT WITHIN EASY ACCESS ON SITE AT ALL TIMES.
7. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
8. TEMPORARY STOCKPILING OF MATERIALS RELATED TO THE CONSTRUCTION ACTIVITIES ARE TO BE PROPERLY STABILIZED, PROTECTED AND DEMARCATED TO LIMIT MOVEMENT OF MATERIAL INTO STORM DRAIN SYSTEM OR ON TO ADJACENT PARCELS.
9. REFUELING AND ANY WORK ASSOCIATED WITH THE MAINTENANCE OF CONSTRUCTION EQUIPMENT TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE REGULATIONS.
10. THE AREAS OF CONSTRUCTION SHALL REMAIN IN A STABLE CONDITION AT THE CLOSE OF EACH CONSTRUCTION DAY. EROSION CONTROLS SHALL BE CHECKED AT THIS TIME AND MAINTAINED OR REINFORCED IF NECESSARY.
11. EROSION CONTROLS SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED WITH PAVEMENT, PLANTINGS, OR WITH AN ESTABLISHED STAND OF GRASS. EROSION CONTROLS SHALL NOT BE REMOVED UNTIL SITE STABILIZATION IS COMPLETE. CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS AS DIRECTED BY THE ENGINEER, DPW AND/OR SWSC.



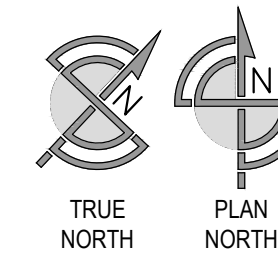
AGROPUR MSI LLC
2266 ENTERPRISE AVENUE
LOT AREA = 3.79 AC
TAX ID: 17-10251-210

GREAT LAKES CHEESE OF LACROSSE
2200 ENTERPRISE AVENUE
LOT AREA = 11.68 AC
TAX ID: 17-10251-190

1

EROSION AND SEDIMENT CONTROL

SCALE: 1" = 20'



RELEASE	DATE	BY	APP.	CGJ	PLANNING REVIEW
A	06/29/2018	BSF			

GREAT LAKES CHEESE
2200 ENTERPRISE AVENUE
LA CROSSE, WISCONSIN

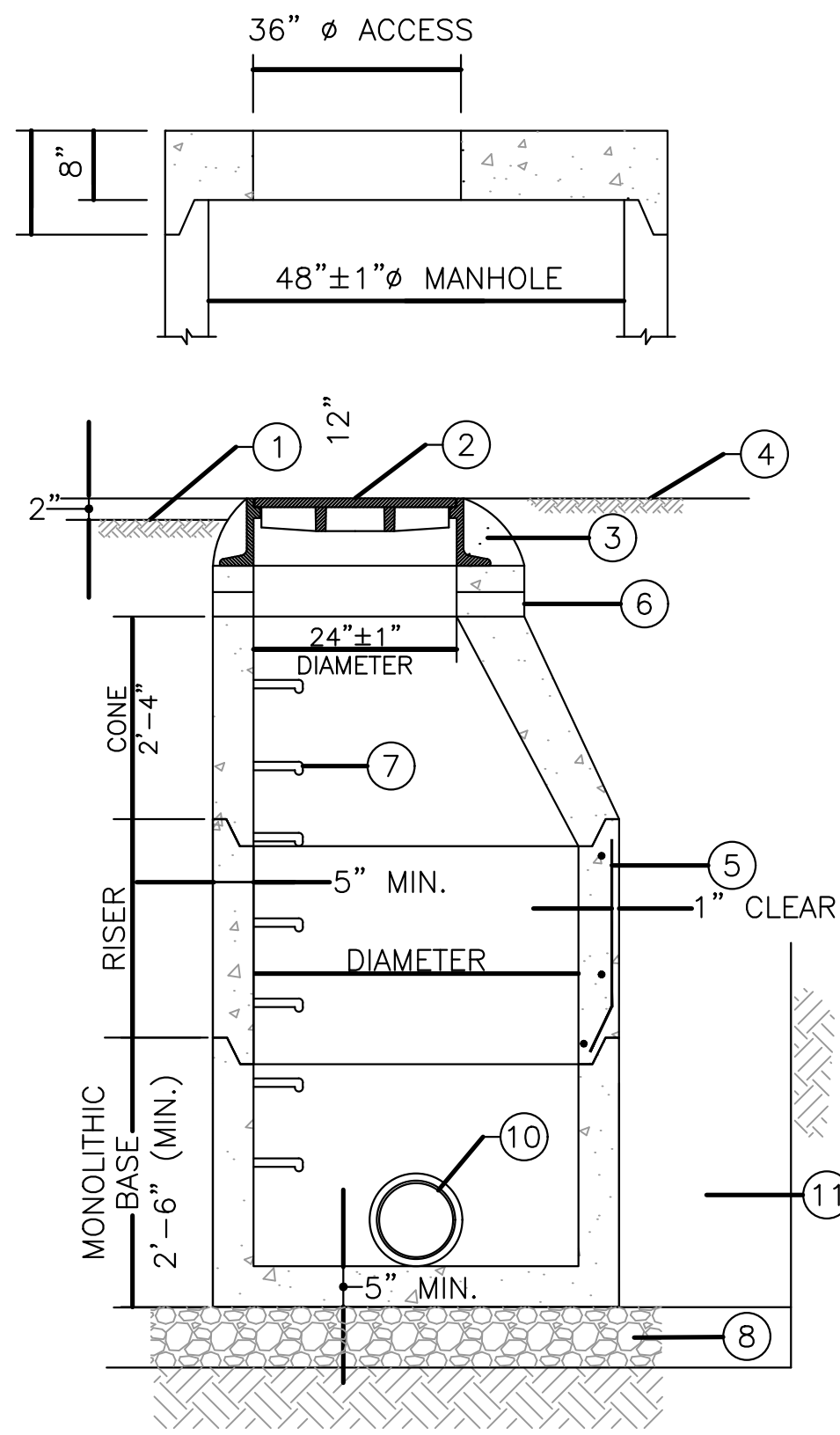
EROSION AND SEDIMENT CONTROL

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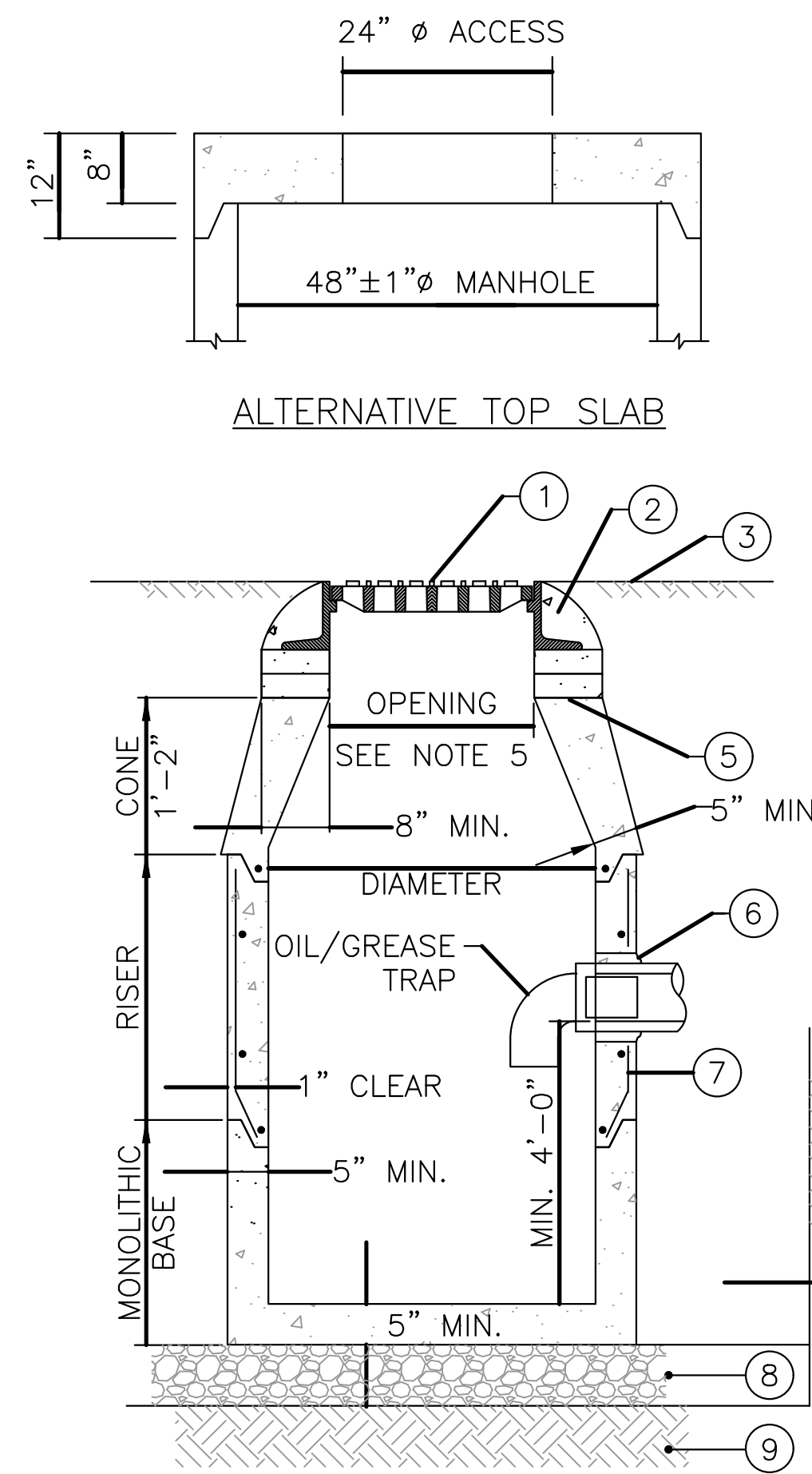
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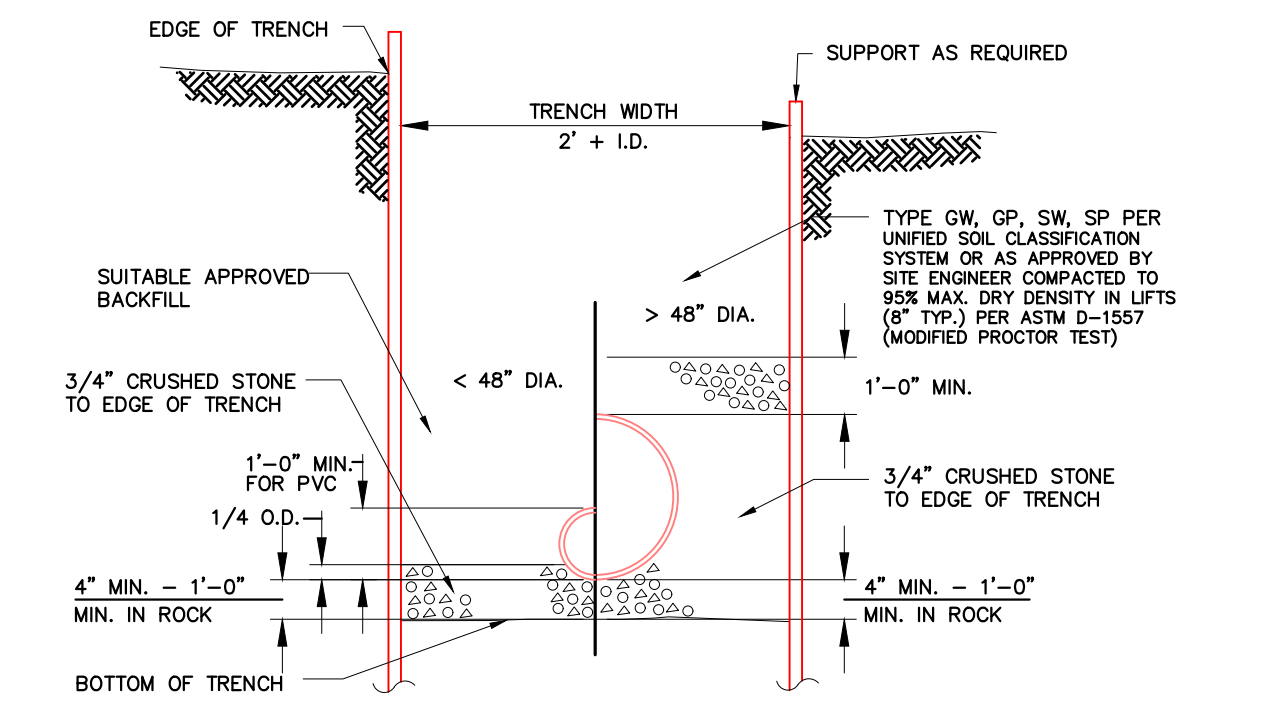
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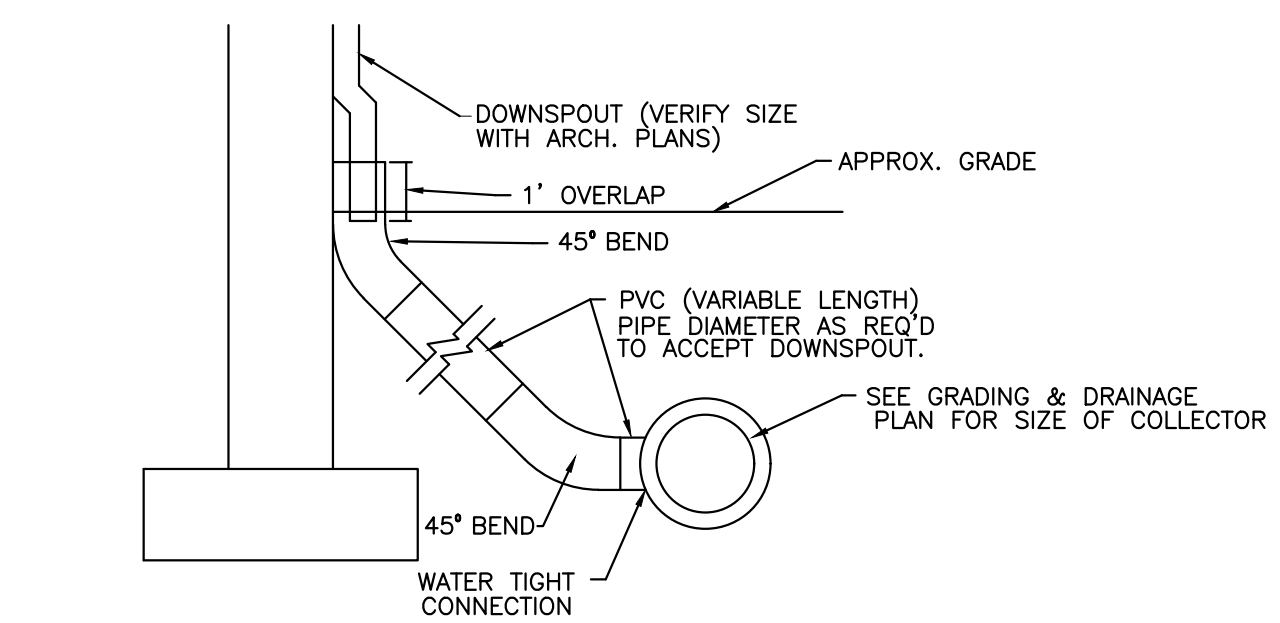
- 1 UNPAVED SURFACE
 - 2 MANHOLE CASTING TO CONFORM TO CMS AA-S114
 - 3 FRAME TO BE SET IN FULL BED OF MORTAR
 - 4 PAVED SURFACE
 - 5 MIN. 0.12 SQ. IN. STEEL PER VERTICAL FOOT, PLACED ACCORDING TO ASTM C-478
 - 6 ADJUST TO GRADE WITH BRICK OR PRECAST CONCRETE RINGS: MAX. 8" ADJUSTMENT
 - 7 MANHOLE STEPS
 - 8 12" STONE BEDDING
 - 9 UNDISTURBED SUBGRADE OR STRUCTURAL FILL
 - 10 PROVIDE "V" OPENINGS (WITH 2" CLEARANCE TO OUTSIDE PIPE). MORTAR PIPE JOINTS
 - 11 COMPACTED STRUCTURAL FILL
- NOTES:
1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS20 LOADINGS.
 2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM-C-478.
 3. ALTERNATE SLAB TOP MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
 4. UNLESS OTHERWISE NOTED, MANHOLES SHALL BE 48" I.D.
 5. PRECAST TO BE REINFORCED.
 6. BACKING SHALL BE CLASS "A" CONCRETE.
 7. ADEQUATELY REINFORCE UNIT TO RESIST ALL WORKING, TRANSPORTATION AND HANDLING STRESSES IN ACCORDANCE WITH ASTM C-76.
 8. SUBMIT SHOP DRAWINGS FOR APPROVAL.



- 1 FRAME AS DICTATED IN PLANSET
 - 2 FRAME TO BE SET IN FULL BED OF MORTAR
 - 3 PAVED SURFACE
 - 4 STRUCTURAL FILL
 - 5 ADJUST TO GRADE WITH BRICK OR PRECAST CONCRETE RINGS: MAX. 8" ADJUSTMENT
 - 6 PROVIDE "V" OPENINGS (WITH 2" CLEARANCE TO OUTSIDE PIPE). MORTAR PIPE JOINTS
 - 7 MIN. 0.12 SQ. IN. STEEL PER VERTICAL FOOT, PLACED ACCORDING TO ASTM C-478
 - 8 12" STONE BEDDING
 - 9 UNDISTURBED SUBGRADE OR STRUCTURAL FILL
- NOTES:
1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS20 LOADINGS.
 2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM-C-478.
 3. ALTERNATE SLAB TOP MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
 4. UNLESS OTHERWISE NOTED, MANHOLES SHALL BE 48" I.D.
 5. PROVIDE 24"x24" OPENING FOR SINGLE GRATE CATCH BASIN (CB). PROVIDE 24"x36" OPENING FOR DOUBLE GRATE CATCH BASIN (DCB).
 6. PRECAST TO BE REINFORCED.
 7. BACKING SHALL BE CLASS "A" CONCRETE.
 8. ADEQUATELY REINFORCE UNIT TO RESIST ALL WORKING, TRANSPORTATION AND HANDLING STRESSES IN ACCORDANCE WITH ASTM C-76.
 9. SUBMIT SHOP DRAWINGS FOR APPROVAL.



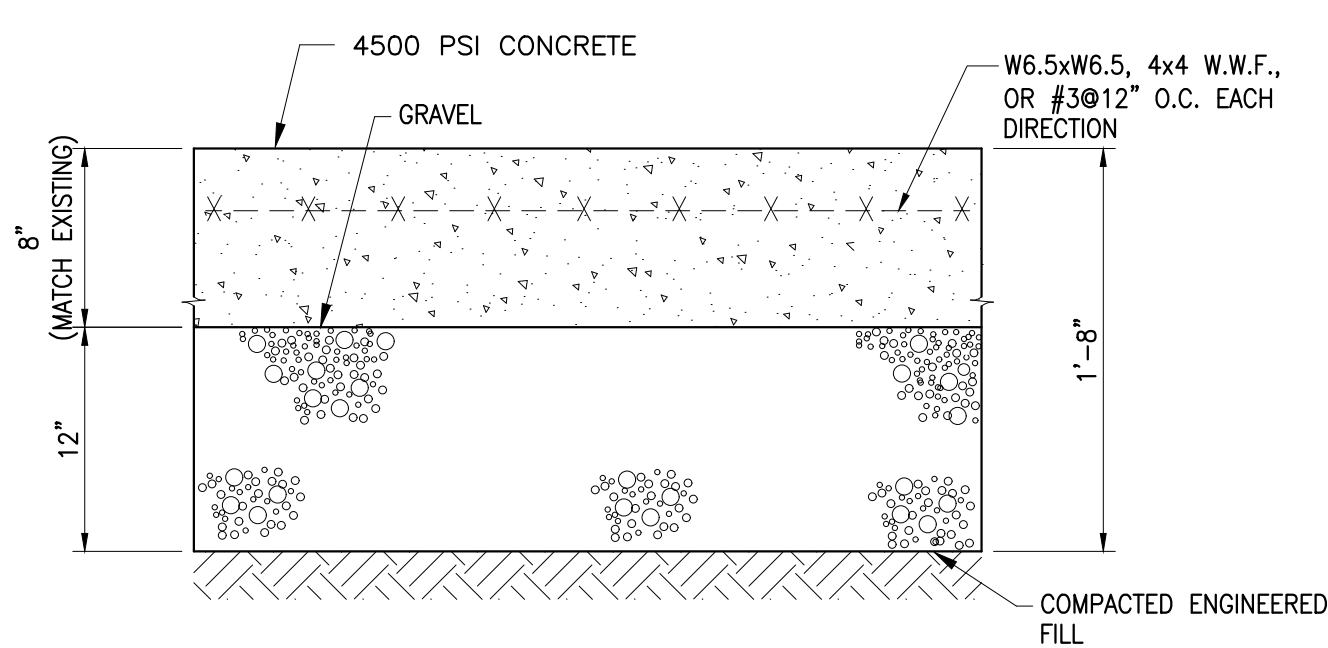
3 STORM DRAIN TRENCH
SCALE: NTS



4 DOWNSPOUT COLLECTOR DETAIL
SCALE: NTS

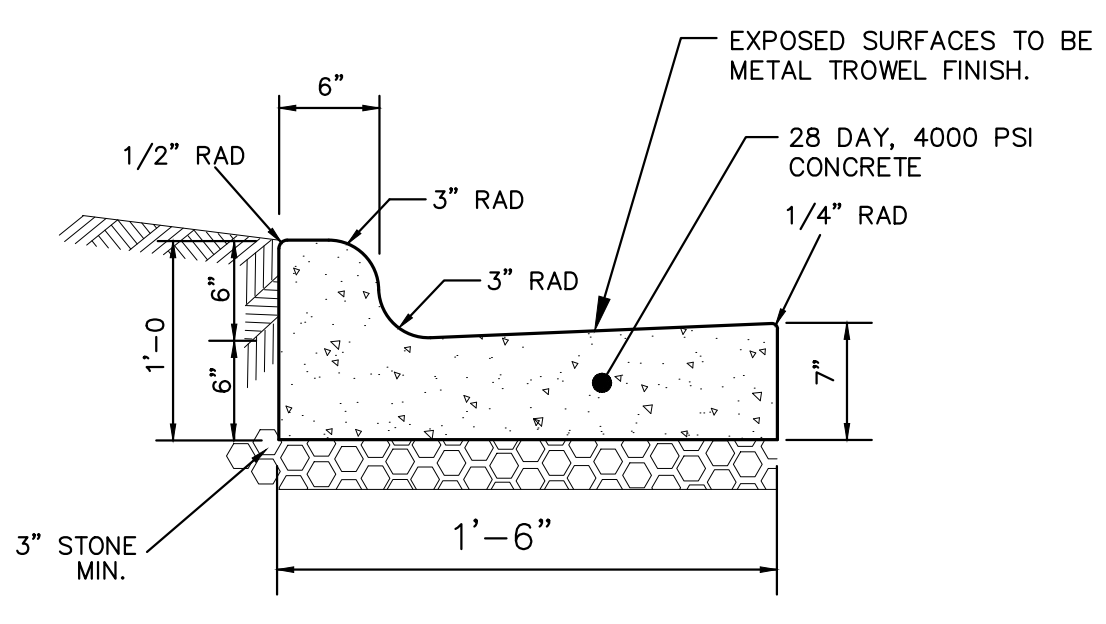
1 PRECAST CONCRETE STORM DRAINAGE MANHOLE
SCALE: NTS

2 PRECAST CONCRETE STORM CATCH BASIN
SCALE: NTS



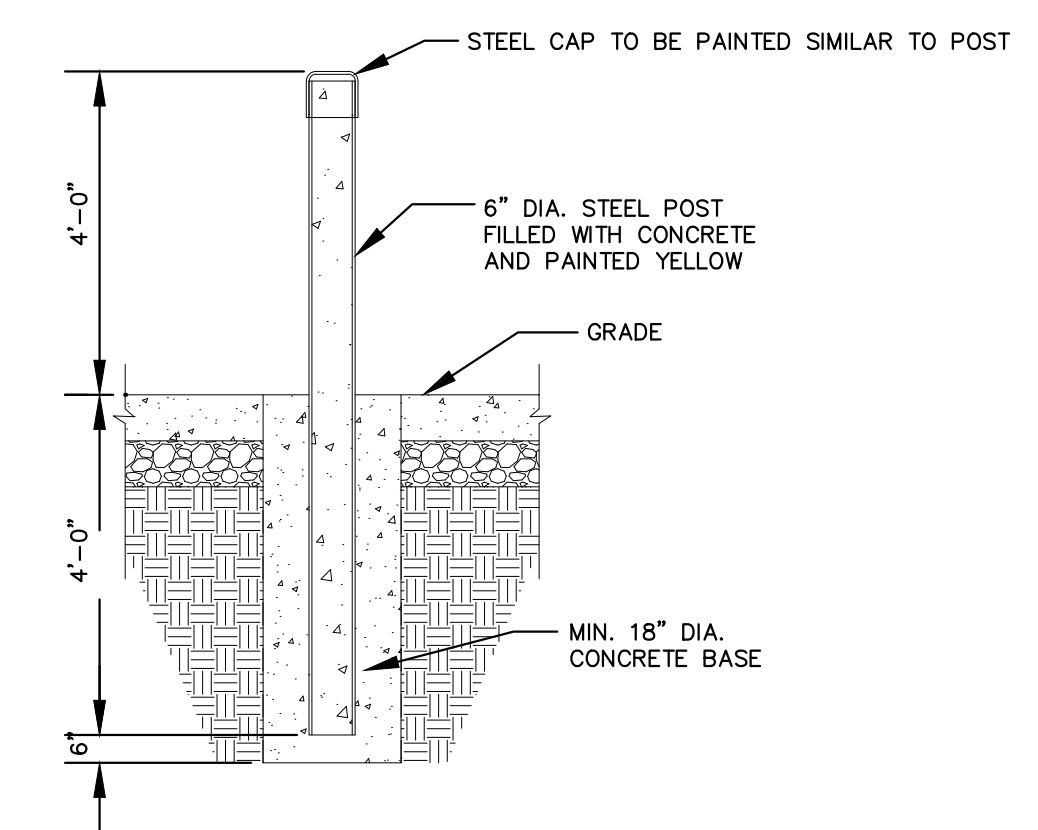
- CONCRETE PAVEMENT NOTES:
1. CONTRACTOR TO SUBMIT CONTRACTION & CONSTRUCTION JOINT DETAILS & SPACINGS (15' MAX.) FOR ALL CONCRETE WORK WITH SHOP DRAWINGS FOR APPROVAL.

5 CONCRETE PAVEMENT DETAIL
SCALE: NTS

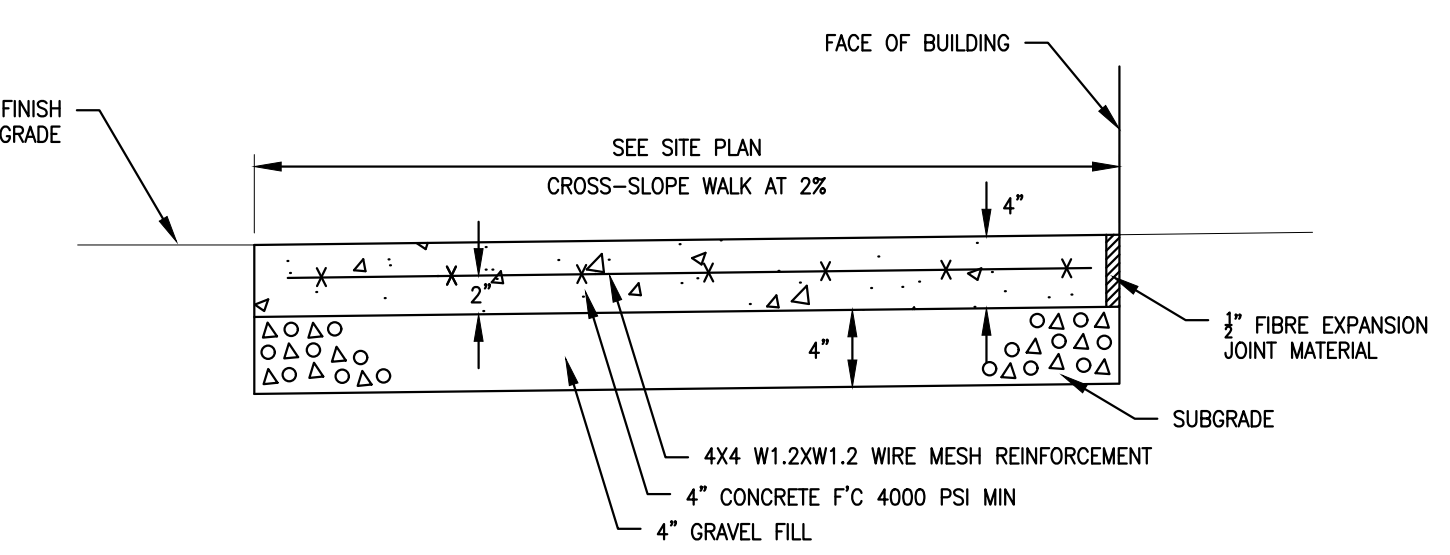


- NOTES:
1. CONSTRUCTION JOINTS SHALL BE SPACED APPROXIMATELY EVERY 10 FEET BUT NOT LESS THAN 6 FEET. 1/4" THICK PREFORMED EXPANSION JOINT FILLER SHALL BE INSTALLED EVERY OTHER JOINT, AND AT INTERSECTION OF CONCRETE SIDEWALK AND CURB.
 2. FORMWORK SHALL REMAIN IN PLACE FOR 24 HOURS FOLLOWING CONCRETE POURING.

6 CONCRETE CURB AND GUTTER
SCALE: NTS



7 BOLLARD
SCALE: NTS



- NOTES:
1. PROVIDE 1/2" EXP. JOINT BETWEEN ALL FIXED OBJECTS AND APRON.
 2. PROVIDE CONTRACTION JOINTS EVERY 5' AND EXTEND AT LEAST 1/3 OF DEPTH OF SLAB.

8 CONCRETE APRON AND WALKOUT FOR BUILDING AT GRADE
SCALE: NTS

PLANNING/REVIEW	RELEASED FOR...
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06/29/2018	BSF
A	APP.

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GREAT LAKES CHEESE

CIVIL DETAILS - SHEET 1

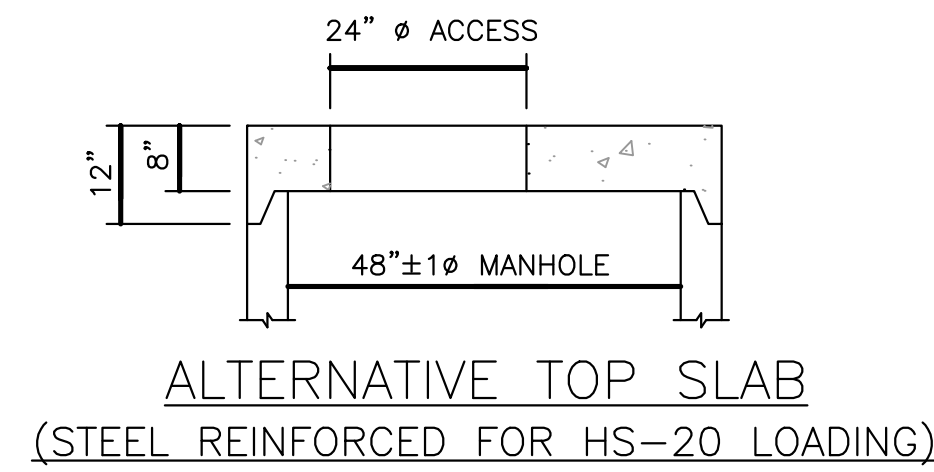
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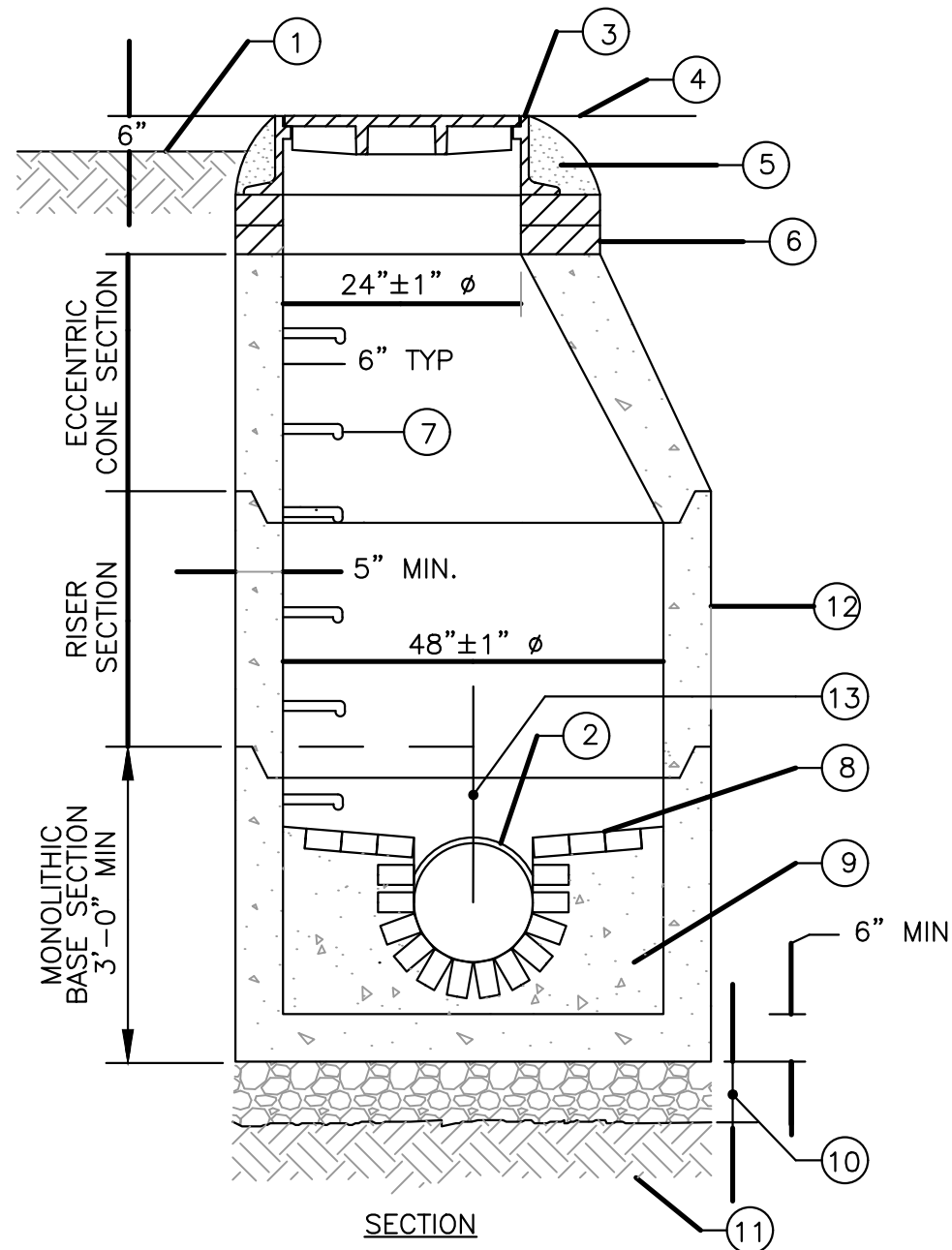
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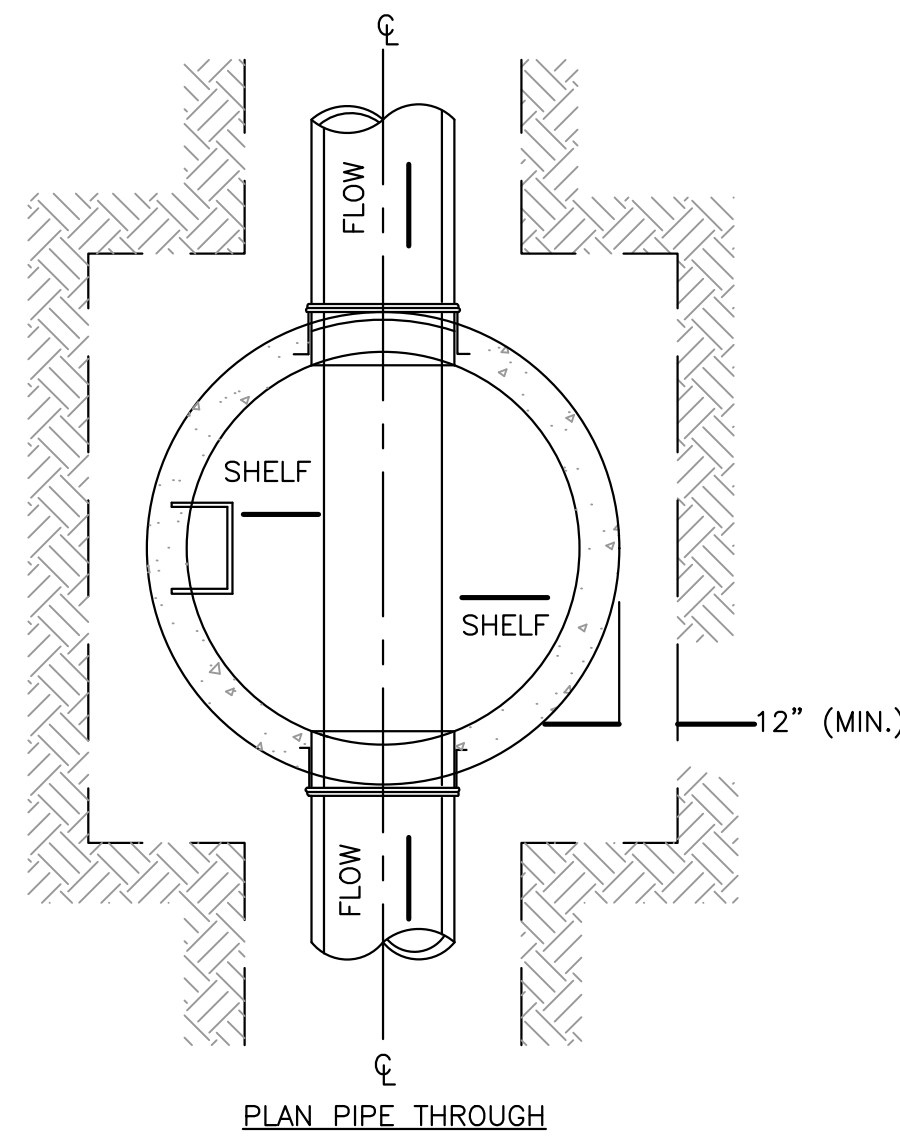
ALTERNATIVE TOP SLAB
(STEEL REINFORCED FOR HS-20 LOADING)



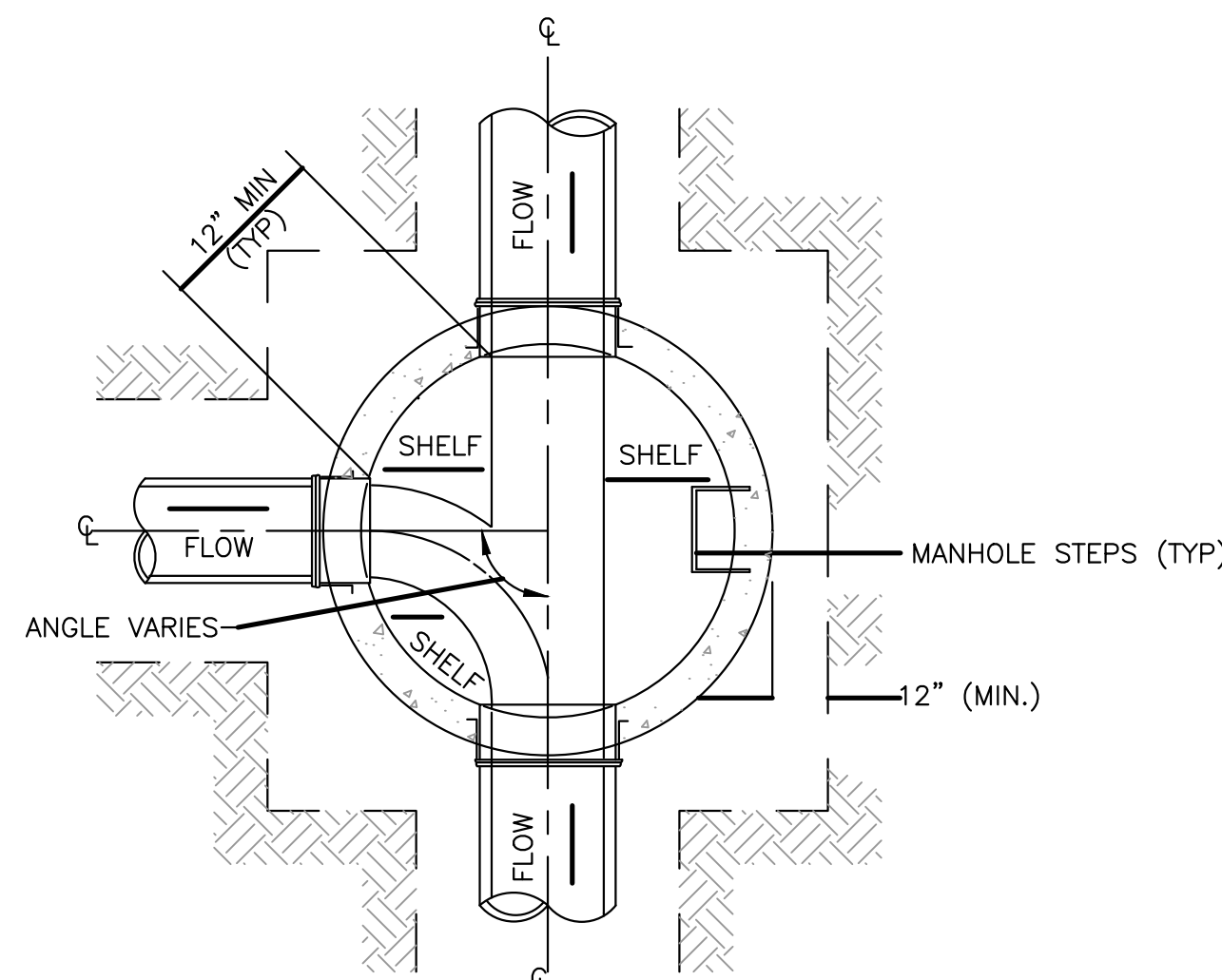
- 1 UNPAVED SURFACE
- 2 PIPE CONNECTION W/KOR-N-SEAL FLEXIBLE BOOT JOINT OR APPROVED EQUAL
- 3 CAST IRON MANHOLE FRAME & COVER TO BE SET IN FULL BED OF MORTAR WITH 30° CLEAR OPENING
- 4 PAVED SURFACE
- 5 FRAME TO BE SET IN FULL MORTAR BED
- 6 ADJUST TO GRADE WITH BRICK OR PRECAST CONCRETE RINGS; MAX. 8" ADJUSTMENT
- 7 STEEL REINFORCED POLYPROPYLENE MANHOLE STEP @ 12" O.C. (TYP) AND SHALL MEET ASTM-478
- 8 BRICK SHELF ELEVATION SAME AS CROWN OF HIGHEST PIPE (SHELF SLOPE 1"/FT)
- 9 4000 psi CONCRETE
- 10 12" PIPE BEDDING OR STONE
- 11 COMPACTED SUBGRADE OR COMPACTED STRUCTURAL FILL IN ACCORDANCE WITH THE GEOTECH REPORT
- 12 ALL EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATER PROOFING MATERIAL
- 13 12" (MINIMUM) ABOVE HIGHEST CROWN

NOTES:

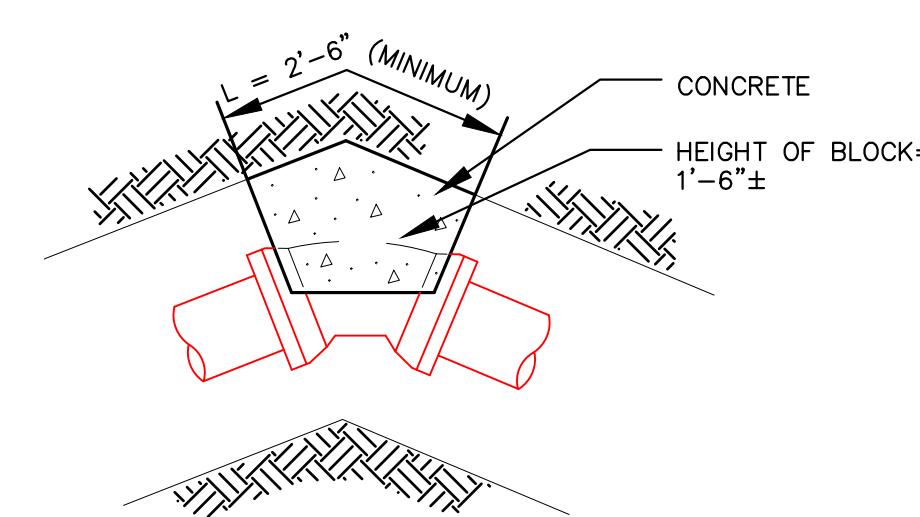
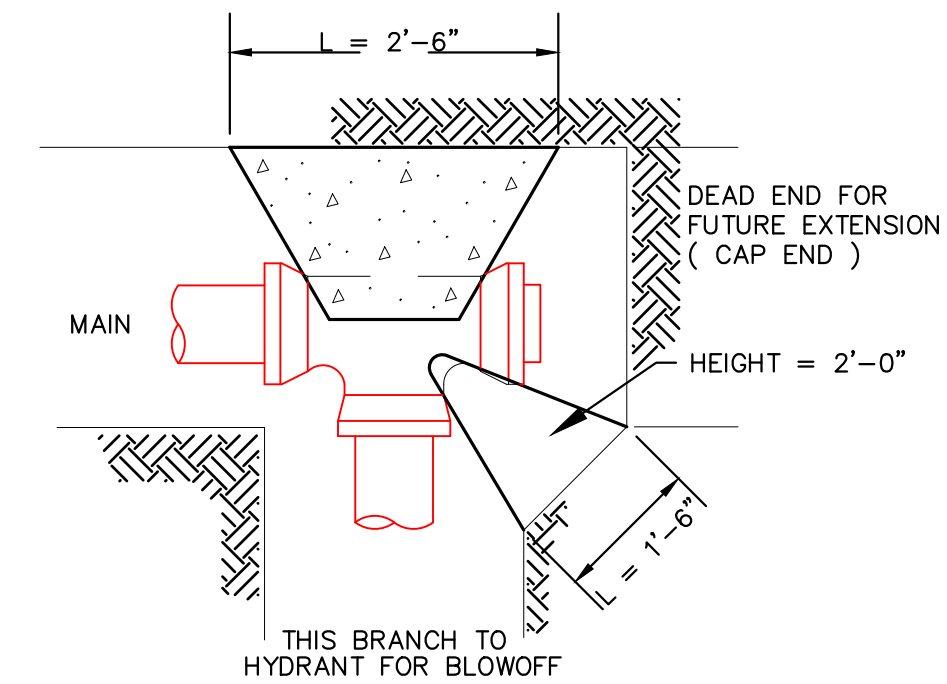
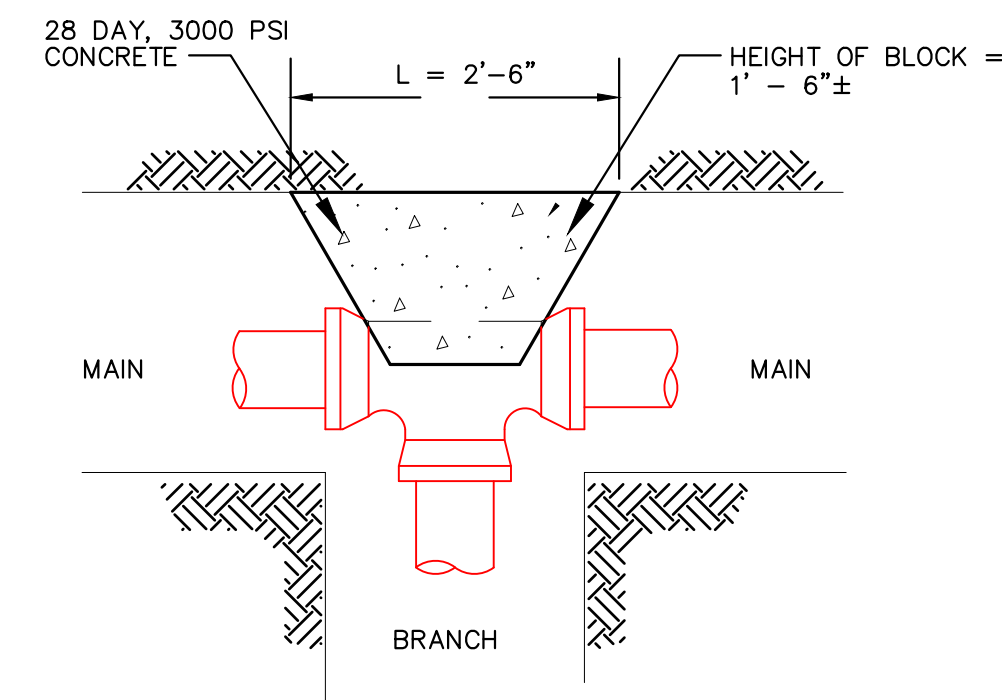
1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS20 LOADINGS.
2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM-C-478.



PLAN PIPE THROUGH



PLAN AT JUNCTION

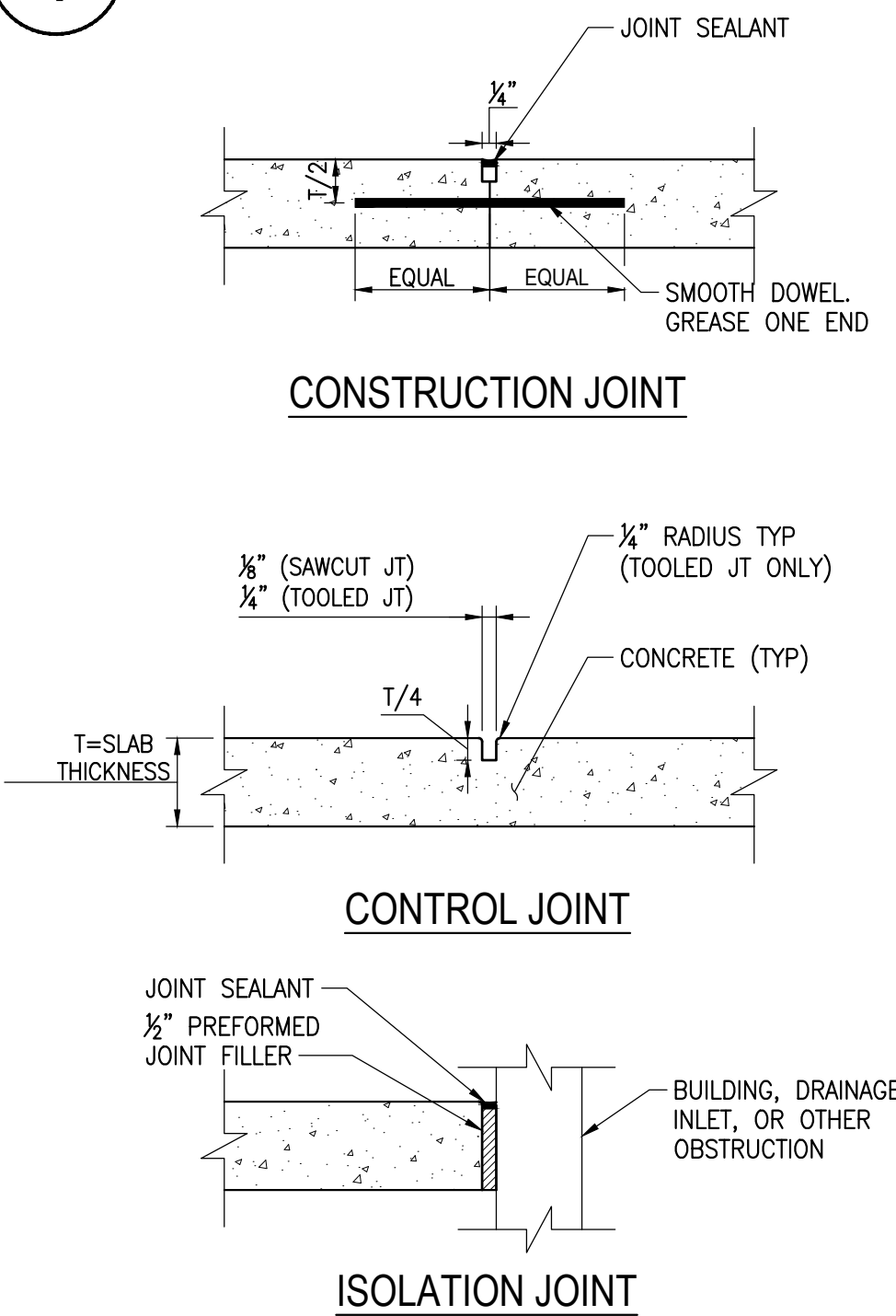


CONCRETE THRUST BLOCKING SCHEDULE									
Fitting Size	Min. Blocking Area (ft.)			Min. Concrete Req'd. (yd.)					
	Tee	90°	45°	TEE	90°	45°			
4	1	2	1	0.1	0.1	0.1			
6	2	3	2	0.1	0.1	0.1			
8	4	5	3	0.2	0.2	0.1			
10	6	8	4	0.2	0.3	0.1			
12	8	11	6	0.3	0.5	0.2			
14	11	15	8	0.5	0.8	0.3			
16	14	19	11	0.7	1.1	0.5			
18	17	24	13	0.9	1.5	0.6			
20	21	30	16	1.2	2.1	0.8			
24	31	43	23	2.2	3.5	1.4			
30	48	67	36	4.2	6.8	2.7			
36	68	96	52	7.0	11.7	4.7			

INCREASE BLOCKING AREA AND CONCRETE QUANTITY FOR PRESSURES ABOVE 200 P.S.I. OR POOR SOIL CONDITIONS.
KEEP CONCRETE AWAY FROM JOINTS. PLACE CONCRETE FAIRLY DRY AND FORM IF REQUIRED FOR MAXIMUM AREA AGAINST UNDISTURBED SOIL.
ALL FITTINGS AND ACCESSORIES TO BE WRAPPED WITH 10 MIL POLYETHYLENE PRIOR TO POURING BLOCKING.
USE 3000 P.S.I. CONCRETE.

1 PRECAST CONCRETE SANITARY MANHOLE

SCALE: NTS



- DETAIL NOTES:
1. PROVIDE ISOLATION JOINT AT ALL LOCATIONS WHERE CONCRETE PAVEMENT ABUTS BUILDING FOUNDATION, CONCRETE DRAINAGE STRUCTURES, OR OTHER OBSTRUCTIONS.

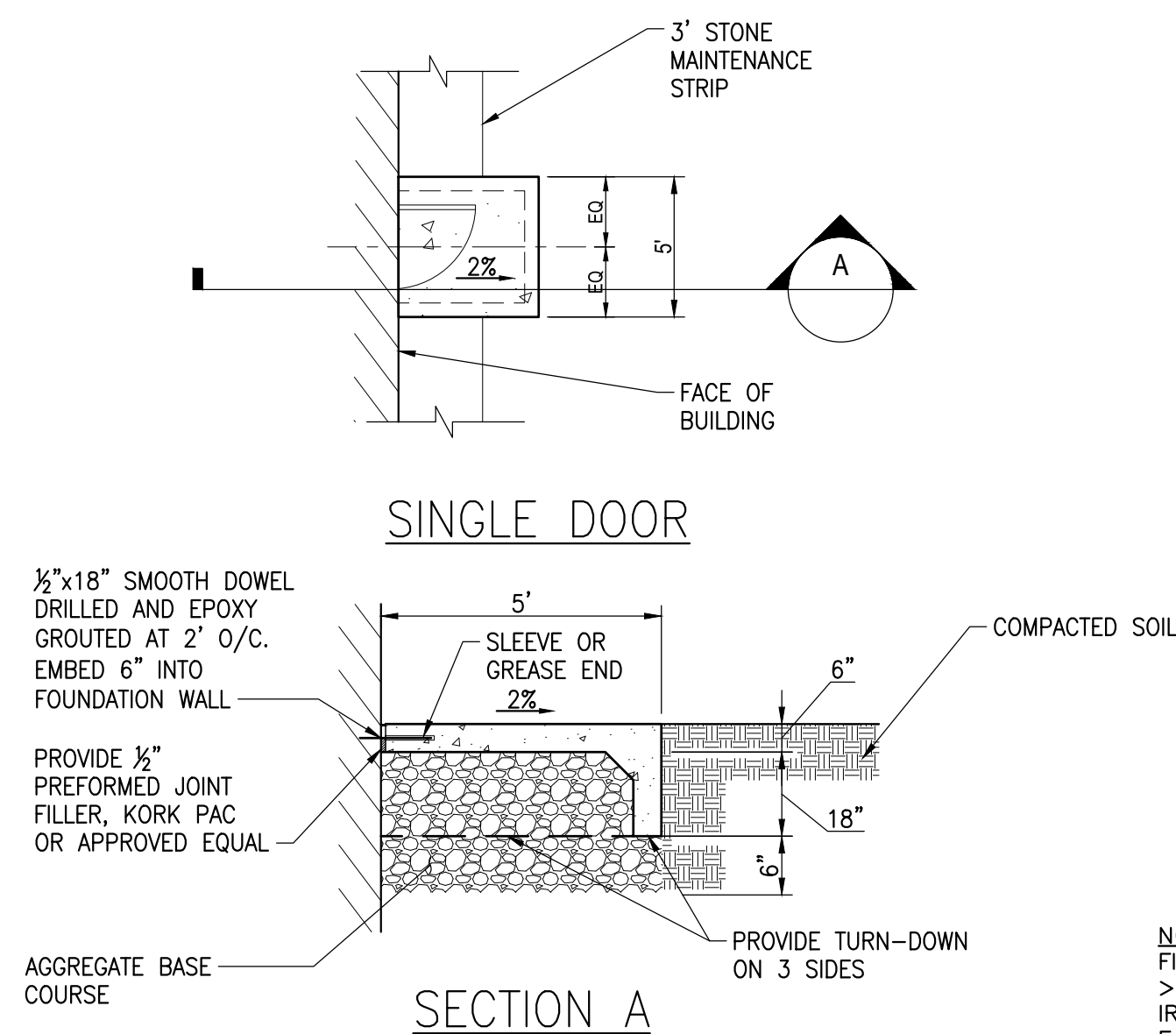
3 TYPICAL CONCRETE PAVEMENT JOINTS

SCALE: NTS

C-SITE-010

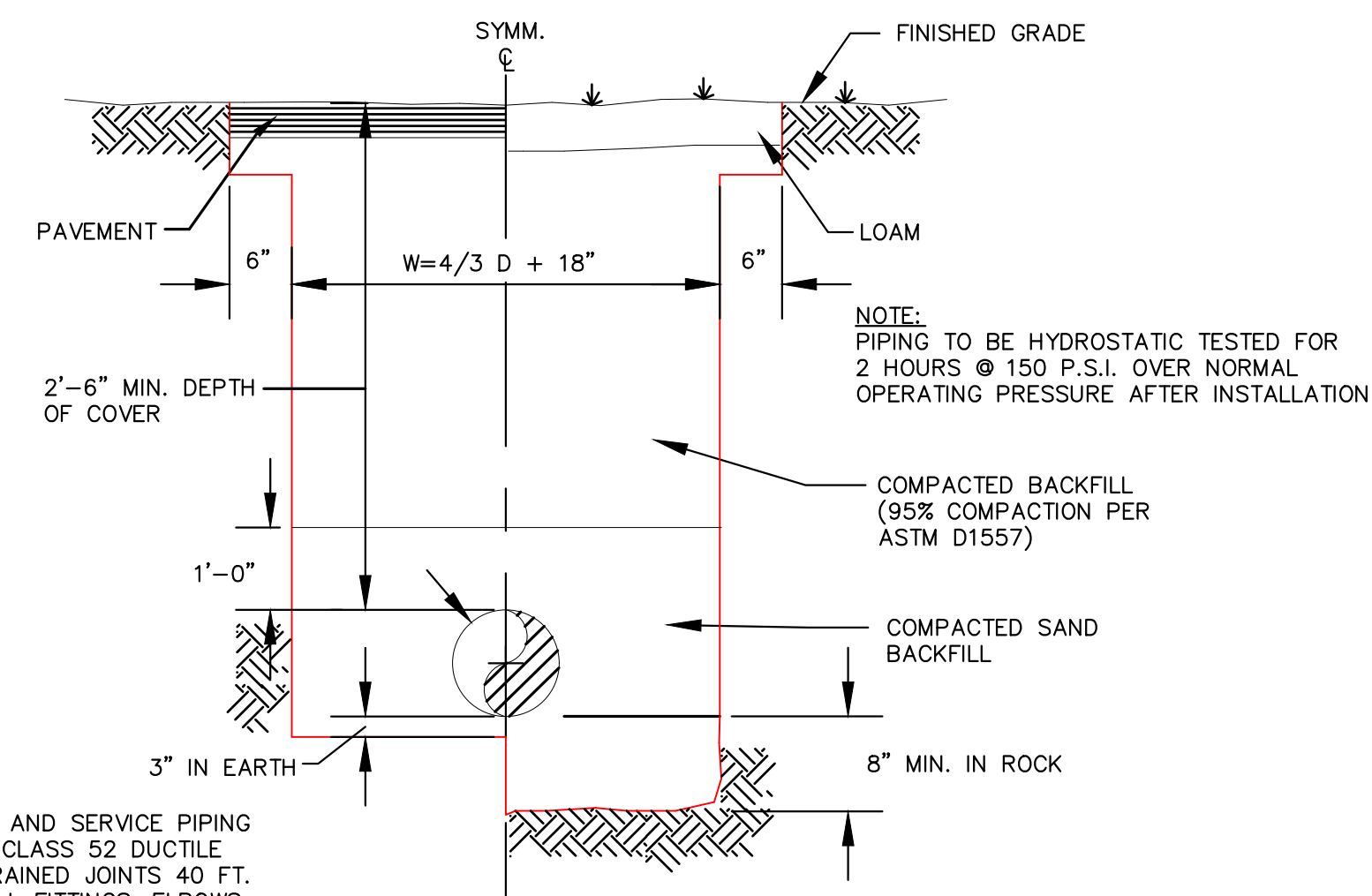
2 THRUST BLOCKS

SCALE: NTS



SINGLE DOOR

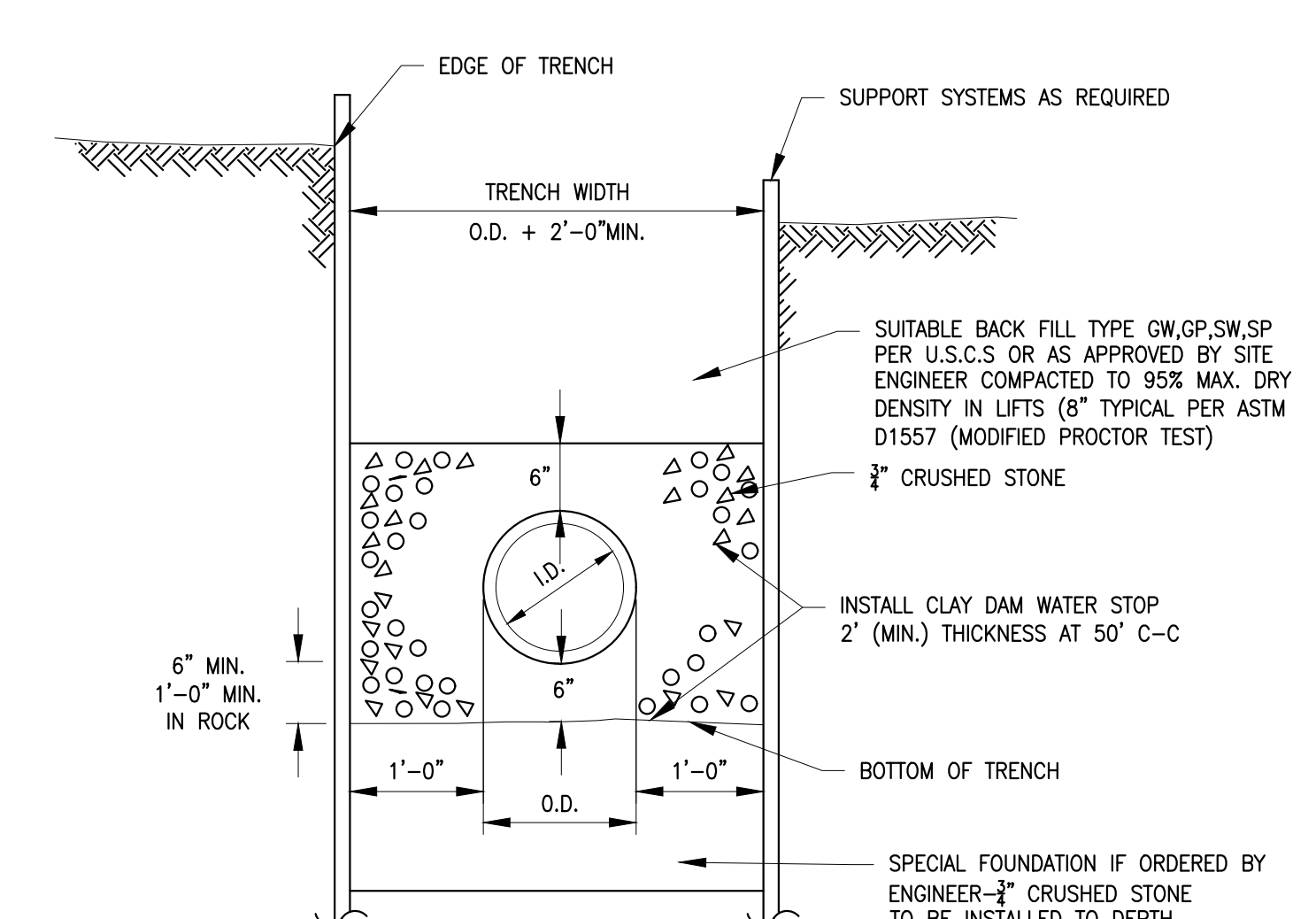
SECTION A



NOTE:
FIRE LINE PIPING AND SERVICE PIPING > 3" I.D. TO BE CLASS 52 DUCTILE IRON WITH RESTRAINED JOINTS 40 FT. EACH SIDE OF ALL FITTINGS, ELBOWS AND APPURTENANCES. DOMESTIC PIPING < 3" I.D. TO BE TYPE K COPPER PER ASTM B 88.

5 TYPICAL WATER MAIN AND SERVICE TRENCH

SCALE: NTS



6 TYPICAL SANITARY SEWER TRENCH

SCALE: NTS

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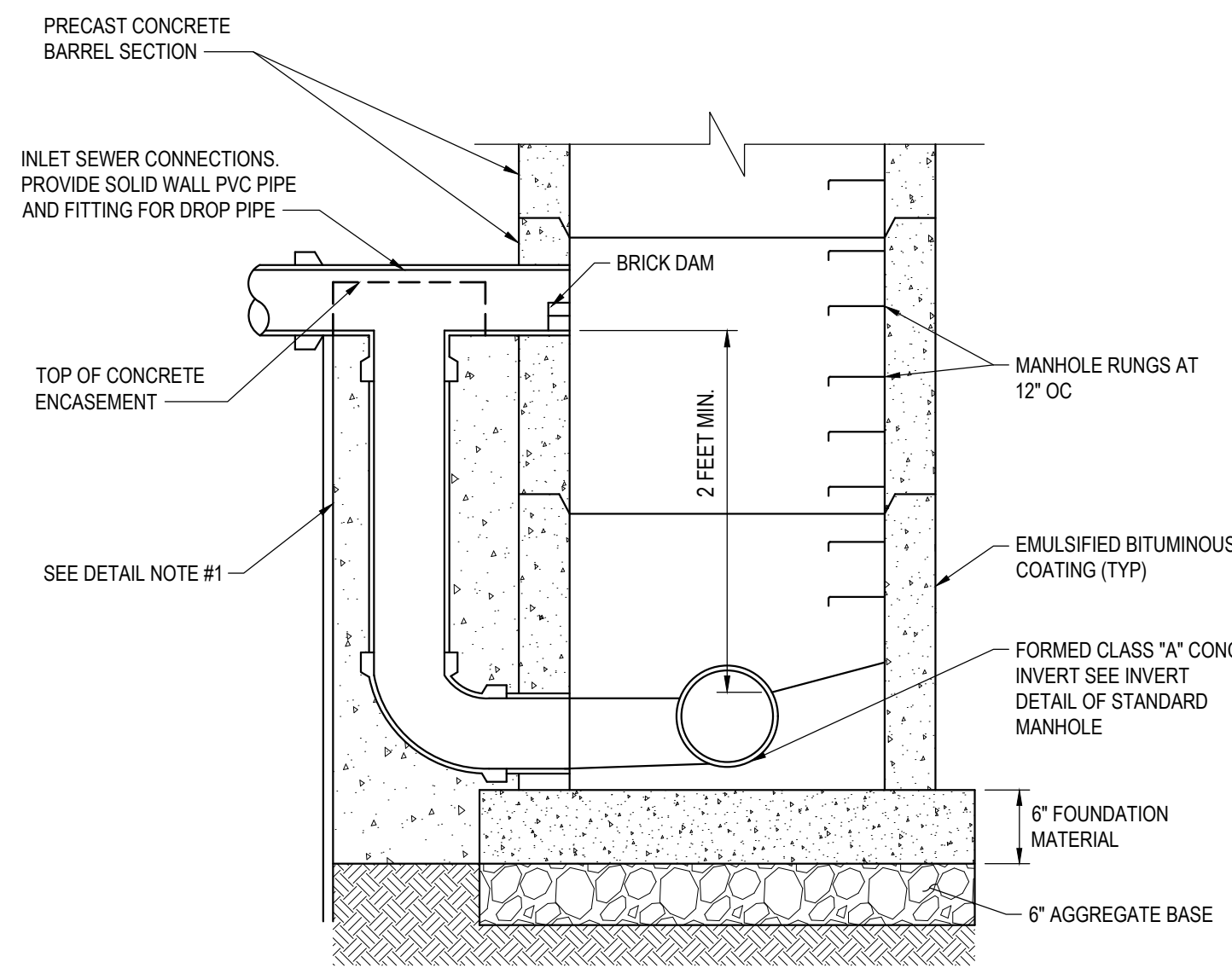


CIVIL DETAILS - SHEET 2

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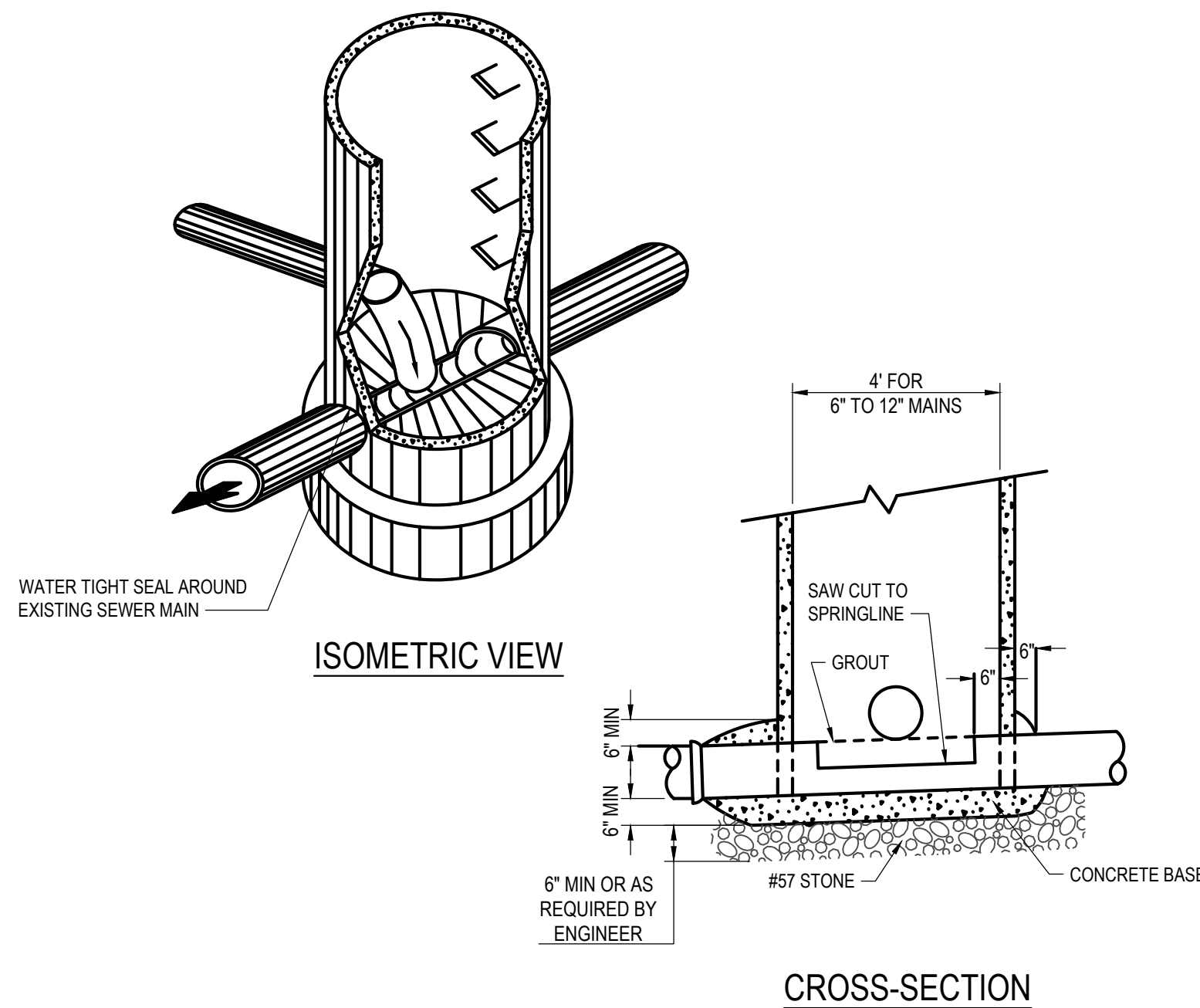
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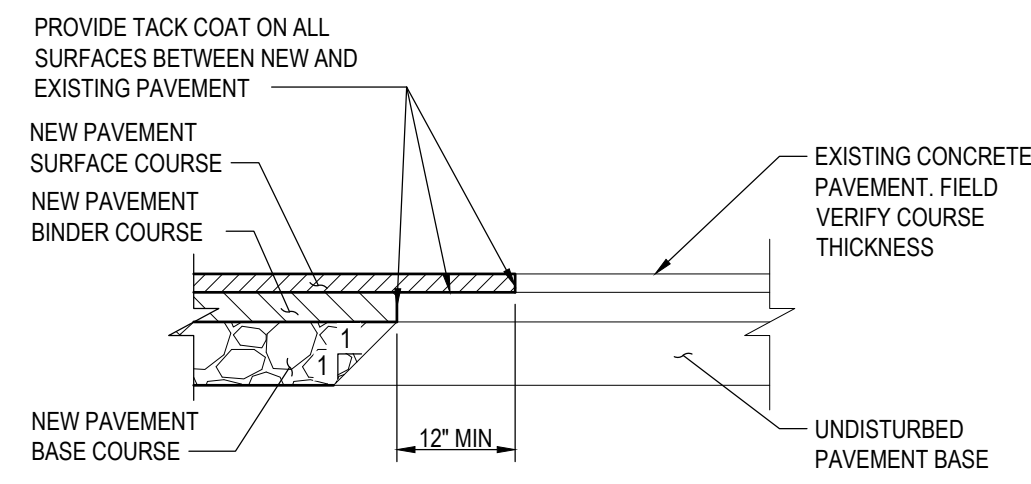
- DETAIL NOTES:**
- CONCRETE TO BE PLACED AGAINST FIRM MATERIAL OR SHEETING CONCRETE ENCASUREMENT 3000 LB CONCRETE.
 - SEE PRECAST SANITARY MANHOLE DETAIL FOR FRAME AND COVER INFORMATION

1 DROP MANHOLE
SCALE: NTS C-UTIL-012



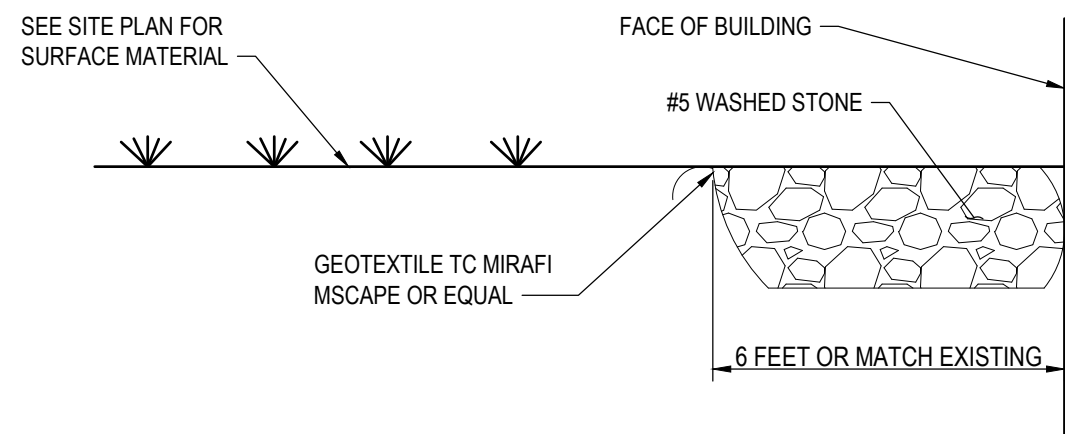
- NOTES:**
- MANHOLE TO BE SET ON CONCRETE BASE AND BASE TO BE ONE POUR.
 - FOR VITRIFIED CLAY PIPE, CONCRETE SHALL BE POURED TO NEXT EXISTING JOINT (BOTH SIDES OF MANHOLE).
 - PIPE OPENING SHALL BE PRECAST BY MANUFACTURER.
 - FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
 - MINIMUM OF 4000 PSI CONCRETE REQUIRED.
 - THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 6" COMPACTED #57 STONE BASE.
 - INVERT TO BUILT FROM PROPOSED PIPE TO EFFLUENT PIPE, ACCORDING TO DETAIL ON INVERTS.

3 DOGHOUSE MANHOLE
SCALE: NTS

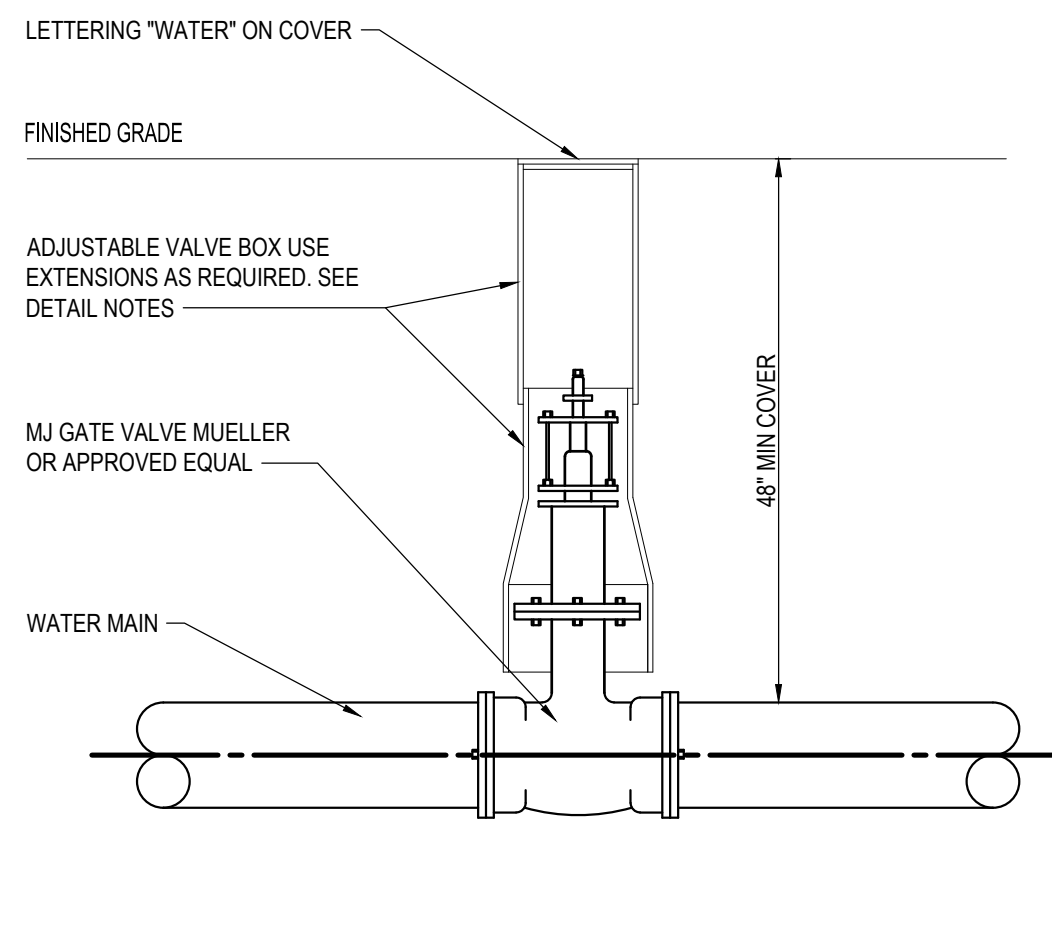


- DETAIL NOTES:**
- SEE DETAIL 5/C5.00 FOR CONCRETE PAVEMENT.

5 NEW PAVEMENT TO EXISTING PAVEMENT CONNECTION
SCALE: NTS C-SITE-007

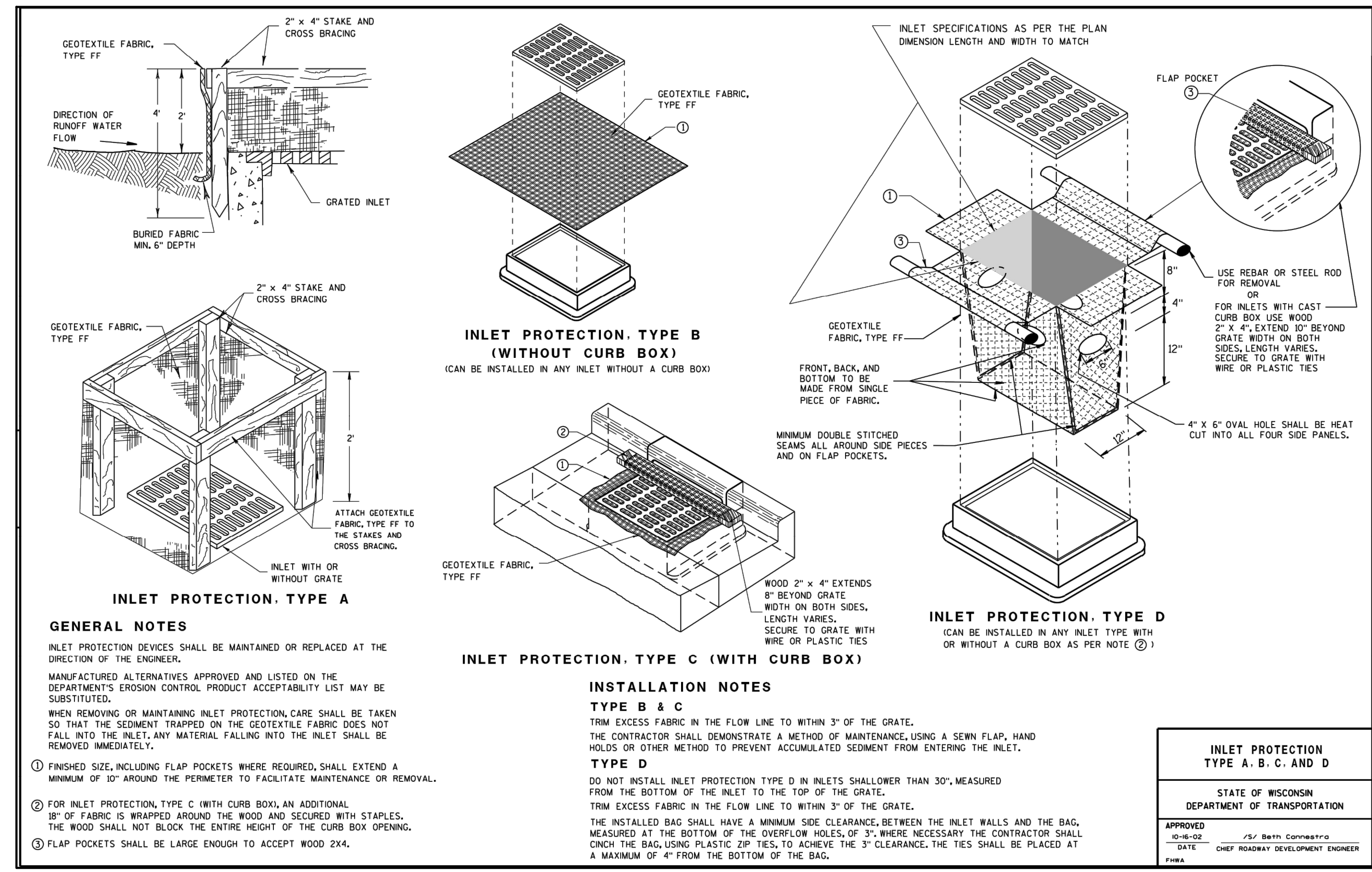


2 STONE MAINTENANCE STRIP
SCALE: NTS C-SITE-093

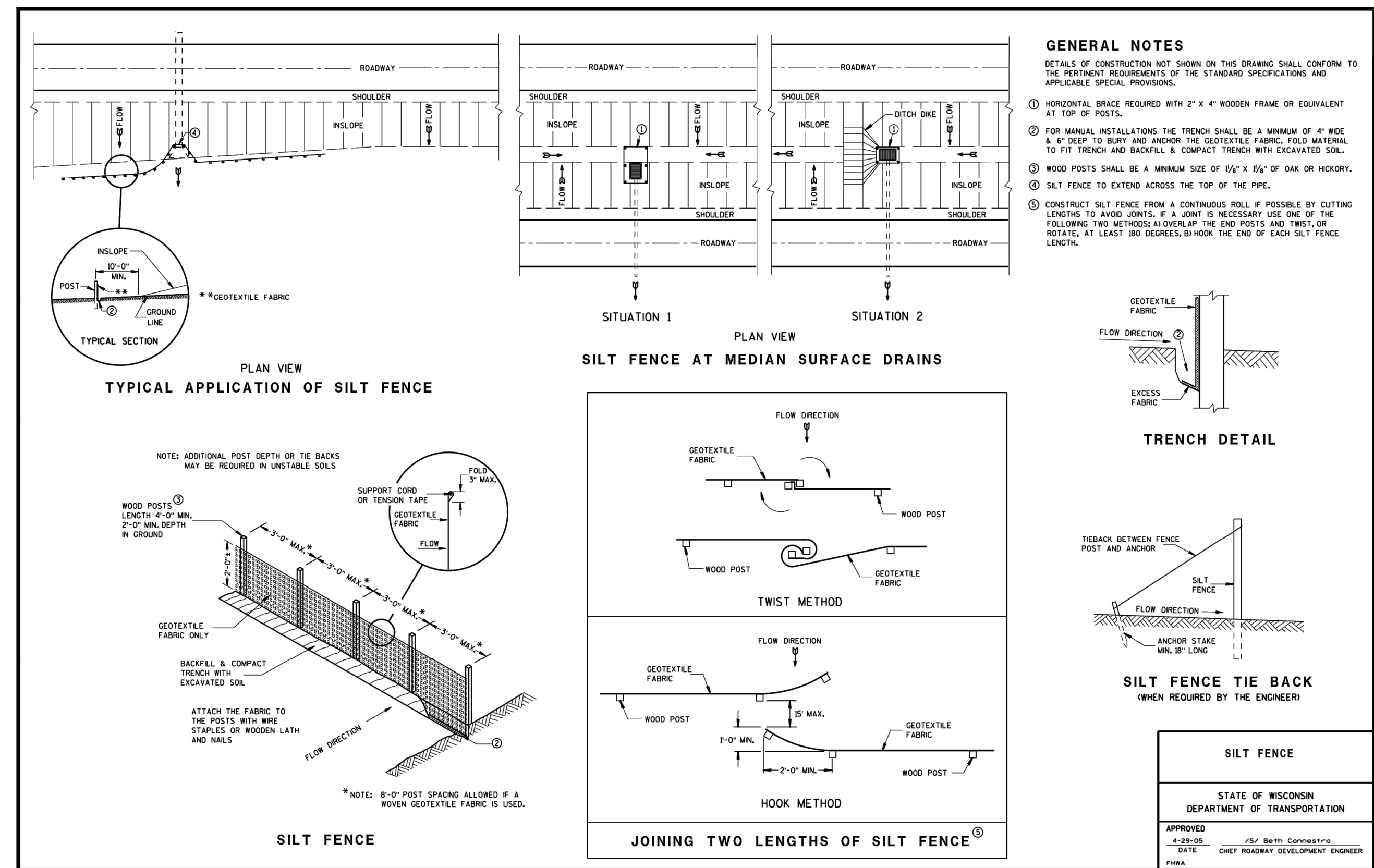


- DETAIL NOTES:**
- IF EXTENSIONS ARE NECESSARY CONTRACTOR SHALL SET "PLUMB" AND ALIGN PROPERLY FOR ACCESS TO OPERATING NUT.

4 TYPICAL GATE VALVE AND VALVE BOX
SCALE: NTS C-UTIL-041



6 INLET PROTECTION
SCALE: NTS



7 SILT FENCE
SCALE: NTS

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31 10 00 - SITE AND SURFACE RESTORATION

SECTION 31 10 00 - SITE AND SURFACE RESTORATION
PART 1 - GENERAL
1.01 SCOPE OF WORK:
A. THIS SECTION PROVIDES FOR RESTORATION FOLLOWING CONSTRUCTION OF UNDERGROUND UTILITIES.
PART 2 - PRODUCTS
NONE
PART 3 - EXECUTION
3.01 DAMAGED IMPROVEMENTS AND IMPROVEMENTS REMOVED AS NEEDED FOR CONSTRUCTION:
A. THE CONTRACTOR SHALL RESTORE ANY SIDEWALK, DRIVEWAY, CURB AND GUTTER, LAWN, SHRUB OR TREE THAT IS DAMAGED OR DESTROYED THROUGH CARELESSNESS OF THE CONTRACTOR DURING CONSTRUCTION OR AS REQUIRED FOR CONSTRUCTION TO PROCEED. EXISTING PAVEMENTS SHALL BE SAW CUT IN A STRAIGHT LINE. OLD PAVEMENT SHALL BE EXPOSED TO FULL DEPTH OF THICKNESS. RESTORATION AND REPLACEMENT SHALL BE APPROVED BY THE ENGINEER AND SHALL BE INCIDENTAL TO THE CONTRACT PRICE.
3.02 GRASS AREAS:
A. RESTORATION IN GRASS AREAS AND LAWNS SHALL INCLUDE THE PLACEMENT OF A MINIMUM OF SIX INCHES OF GOOD QUALITY TOPSOIL. THE TOPSOIL SHALL BE RAKED TO PROVIDE A SMOOTH SURFACE. FERTILIZED WITH 20-10-10 OR 10-10-10 FERTILIZER AT A RATE OF 0.5 POUNDS NITROGEN PER 1,000 SQUARE FEET AND SEEDED AT A RATE OF FOUR POUNDS PER 1000 SQUARE FEET. SEED SHALL BE A GOOD QUALITY MIX HAVING A MINIMUM OF 40% KENTUCKY BLUE GRASS. SEEDS SHALL BE COVERED WITH 1/4 INCH OF SOIL AND ROLLED LIGHTLY. SEEDING AREAS SHALL BE MULCHED WITH HAY OR STRAW TO A THICKNESS OF 1". MULCH SHALL BE ANCHORED BY PUNCHING TWO INCHES INTO THE SOIL WITH A DULL WEIGHTED DISK OR BY USING NETTING OR OTHER MEANS ON STEEP SLOPES.
END OF SECTION 31 10 00

31 14 00 - TOPSOIL AND SALVAGED TOPSOIL

SECTION 31 14 00 - TOPSOIL AND SALVAGED TOPSOIL
PART 1 - GENERAL
1.01 SCOPE OF WORK:
A. APPLICABLE PROVISIONS OF DIVISIONS 0 AND 1 SHALL GOVERN WORK UNDER THIS SECTION.
B. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR THE PROPER COMPLETION OF THE TOPSOIL OR SALVAGED TOPSOIL WORK AS CALLED FOR ON THE PLAN OR SPECIFIED HEREWITHIN.
PART 2 - PRODUCTS AND MATERIALS
2.01 TOPSOIL:
A. TOPSOIL SHALL CONSIST OF THE NATURAL LOAM, SANDY LOAM SILT LOAM, SILTY CLAY LOAM OR CLAY LOAM HUMUS-BEARING SOILS AVAILABLE FROM THE OVERLYING PORTIONS OF THE AREAS CONTEMPLATED BY THE PLANS OR CONTRACT TO BE OCCUPIED BY THE COMPLETED WORK.
2.02 SALVAGED TOPSOIL:
A. SALVAGED TOPSOIL SHALL CONSIST OF THE NATURAL LOAM, SANDY LOAM, SILT LOAM, SILTY CLAY LOAM OR CLAY LOAM HUMUS-BEARING SOILS AVAILABLE FROM THE OVERLYING PORTIONS OF THE AREAS CONTEMPLATED BY THE PLANS OR CONTRACT TO BE OCCUPIED BY THE COMPLETED WORK.
PART 3 - CONSTRUCTION METHODS
3.01 PREPARATION FOR TOPSOILING:
A. ALL AREAS DESIGNATED TO BE COVERED WITH TOPSOIL SHALL BE UNDERCUT OR UNDERFILLED TO SUCH A DEGREE THAT WHEN COVERED TO THE REQUIRED DEPTH WITH TOPSOIL, THE FINISHED WORK WILL BE IN ACCORDANCE WITH THE REQUIRED LINES, GRADES, SLOPES AND CROSS SECTIONS.
B. SUCH WORK WILL BE CONSIDERED SUBSIDIARY TO THE ITEMS OF TOPSOIL OR SALVAGED TOPSOIL AND NO ADDITIONAL COMPENSATION WILL BE MADE THEREFOR, NOR WILL ALLOWANCE BE MADE THEREFOR IN THE FINAL MEASUREMENT FOR QUANTITIES OF THE SEVERAL TYPES OF CLASSES OF EXCAVATION.
3.02 PROCESSING TOPSOIL OR SALVAGED TOPSOIL:
A. ALL AREAS FROM WHICH TOPSOIL IS PROCURED SHALL BE CLEARED, IF NECESSARY, BY MEANS OF MOWING WEEDS OR OTHER VEGETATION TO A HEIGHT OF APPROXIMATELY SIX INCHES AND FREED FROM ANY LITTER SUCH AS BRUSH, ROCK OR FOREIGN MATERIAL OF OBJECTIONABLE SIZE OR QUANTITY.
B. THE HUMUS-BEARING SOIL SHALL THEN BE STRIPPED OFF TO SUCH DEPTH AS AVAILABLE OR AS NECESSARY TO PRODUCE SUFFICIENT VOLUMES TO COVER THE DESIGNATED AREAS TO THE REQUIRED DEPTHS, TAKING ALL PRACTICABLE CARE TO AVOID INCORPORATION OF ANY OF THE UNDERLYING STERILE SOIL THEREWITH.
C. THE TOPSOIL THUS STRIPPED FROM THESE AREAS MAY BE STOCKPILED ON ANY CONVENIENT PLACE WITHIN THE PROJECT LIMITS SO THAT IT CAN BE RECLAIMED AND SPREAD ON THE AREAS DESIGNATED, OR IT MAY BE PLACED DIRECTLY ON THE DESIGNATED AREAS PROVIDED THEY HAVE BEEN PREPARED TO RECEIVE THE SAME.
D. ANY APPRECIABLE VOLUMES EXCAVATED IN EXCESS OF THE AMOUNTS REQUIRED TO ACCOMPLISH THESE REQUIREMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.
3.03 PLACING:
A. AFTER THE AREAS UPON WHICH THE TOPSOIL IS TO BE PLACED HAVE BEEN PREPARED AND FINISHED TO THE REQUIRED LINES, GRADES, SLOPES AND CROSS SECTION, THE TOPSOIL SHALL BE PLACED AND SPREAD THEREON TO A UNIFORM DEPTH AS SHOWN ON THE PLANS OR REQUIRED IN THE CONTRACT, OR IF NONE IS SO SHOWN, TO A DEPTH OF SIX INCHES OR SUCH GREATER DEPTH AS DESIGNATED BY THE ENGINEER.
B. AREAS OF SALVAGED TOPSOIL WASHED OUT OR DAMAGED DUE TO EROSION AFTER PARTIAL ACCEPTANCE OF THE SALVAGE TOPSOIL AND ALL ASSOCIATED EROSION CONTROL WORK SHALL BE RESTORED BY THE CONTRACTOR. THE RESTORATION OF SUCH AREAS WILL BE CONSIDERED INCIDENTAL TO THE WORK.
END OF SECTION 31 14 00

31 22 00 - GRADING

SECTION 31 22 00 - GRADING
PART 1 - GENERAL
1.01 SECTION INCLUDES:
A. REMOVING TOPSOIL FROM AREAS TO BE EXCAVATED, AND STOCKPILED ON SITE FOR FUTURE USE.
PART 2 - PRODUCTS
NOT USED
PART 3 - EXECUTION
3.01 REMOVAL OF TOPSOIL:
A. AREAS FROM WHICH TOPSOIL IS PROCURED SHALL BE CLEARED BY MOWING WEEDS OR OTHER VEGETATION TO A HEIGHT OF APPROXIMATELY SIX INCHES AND FREED FROM LITTER SUCH AS BRUSH, ROCK, OR FOREIGN MATERIAL OF OBJECTIONABLE SIZE OR QUANTITY.
B. REMOVE TOPSOIL OF HORTICULTURE VALUE FROM AREAS TO BE EXCAVATED AND REGRADED AND STOCKPILE IN AREA DESIGNATED BY THE ENGINEER.
C. DO NOT PERMIT TOPSOIL TO BE MIXED WITH SUBSOIL.
D. DO NOT STRIP TOPSOIL WHEN WET.
E. DO NOT STOCKPILE TOPSOIL TO DEPTHS EXCEEDING 8 FEET. DO NOT DRIVE HEAVY EQUIPMENT OVER STOCKPILED TOPSOIL.
3.02 ROUGH GRADING:
A. ROUGH GRADE SITE TO REQUIRED LEVELS, PROFILES, CONTOURS, DITCHES AND ELEVATIONS READY FOR FINISH GRADING AND SURFACE TREATMENT.
3.03 FINISH GRADING:
A. USE PREVIOUSLY STOCKPILED TOPSOIL TO FORM A 6" SEEDING BASE.
END OF SECTION 31 22 00

31 23 00 - TRENCHING, BEDDING, BACKFILLING AND COMPACTION OF PIPE WORK

SECTION 31 23 00 - TRENCHING, BEDDING, BACKFILLING & COMPACTION OF PIPE WORK
PART 1 - GENERAL
1.01 SECTION INCLUDES:
A. WORK UNDER THIS SECTION SHALL INCLUDE EXCAVATION AND TRENCHING, BACKFILLING FOR ALL UTILITY WORK OUTSIDE OF BUILDINGS, AS REQUIRED BY THE PLANS AND SPECIFICATIONS.
PART 2 - PRODUCTS
2.01 GRANULAR BACKFILL:
A. WHEN UNSTABLE SOIL, ROCK EXCAVATION, OR FIRM CLAY SOIL ARE ENCOUNTERED IN THE TRENCH, THE ENGINEER MAY REQUIRE THE PLACEMENT OF GRANULAR BACKFILL MATERIAL. GRANULAR BACKFILL SHALL BE APPROVED BY THE ENGINEER AND SHALL BE FREE OF ALL STONE, WOOD AND OTHER VEGETATION.
B. GRANULAR BACKFILL SHALL BE TAKEN FROM EXCAVATED MATERIAL WHEN AVAILABLE WITHIN 300 FEET OF THE PLACE USED. BACKFILL TAKEN FROM THE TRENCH WITHIN 300 FEET OF THE PLACE USED WILL BE CONSIDERED INCIDENTAL TO THE WORK.
2.02 STONE BEDDING:
A. WHEN THE TRENCH BOTTOM IS UNSTABLE BECAUSE OF GROUND WATER OR WET SOIL, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE ENGINEER MAY REQUIRE STONE BEDDING. STONE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 6.43(2)(A) OF THE "STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN, 5TH EDITION".
PART 3 - EXECUTION
3.01 EXISTING STRUCTURES & UTILITIES:
A. OBSTRUCTIONS SUCH AS FENCES, MAIL BOXES, CULVERTS AND STREET SIGNS WHICH ARE IN THE WAY OF NEW CONSTRUCTION SHALL BE REMOVED WITHOUT DAMAGE. ITEMS THAT PROVIDE ESSENTIAL SERVICE SHALL BE TEMPORARILY RELOCATED AND NON-ESSENTIAL ITEMS SHALL BE PROPERLY STORED FOR THE DURATION OF CONSTRUCTION. UPON COMPLETION OF THE WORK, ALL SUCH ITEMS SHALL BE REPLACED IN THEIR PROPER SETTING AT THE SOLE EXPENSE OF THE CONTRACTOR, AS DIRECTED BY THE ENGINEER.
B. THE LOCATION AND SIZE OF PIPES, WIRES, CULVERTS, CONDUITS, AND OTHER UNDERGROUND IMPROVEMENTS ARE SHOWN ON THE DRAWINGS INsofar AS RECORDS ARE AVAILABLE AT THE OWNER'S OFFICE OR SURFACE MARKINGS INDICATE. THE CONTRACTOR SHALL USE CAUTION SO THAT THE EXACT LOCATION OF UNDERGROUND STRUCTURES, BOTH KNOWN AND UNKNOWN, MAY BE DETERMINED, AND HE SHALL BE HELD RESPONSIBLE FOR REPAIR OF STRUCTURES WHEN DAMAGED DURING CONSTRUCTION.
C. EXISTING WALKS, PAVEMENTS, TREES AND OTHER SITE IMPROVEMENTS SHALL BE REMOVED ONLY AS NECESSARY FOR CONSTRUCTION AND AS DIRECTED BY THE ENGINEER. ANY OTHER IMPROVEMENTS DAMAGED BY THE CONTRACTOR SHALL BE PAID FOR BY THE CONTRACTOR.
D. WHEN AN EXISTING UNDERGROUND STRUCTURE OCCUPIES THE SPACE REQUIRED FOR THE PROPOSED UTILITY, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. IF NECESSARY, THE ENGINEER WILL DIRECT A CHANGE IN LOCATION OF THE PROPOSED IMPROVEMENT OR AUTHORIZE RELOCATION OF THE EXISTING STRUCTURE. THE CONTRACTOR SHALL ARRANGE FOR ALL RELOCATIONS, AND UNLESS STATED OTHERWISE ON THE PLANS OR IN THE SPECIFICATIONS, THE CONTRACTOR WILL BE PAID FOR SAID RELOCATION AS EXTRA WORK.
E. WHEN THE ENGINEER DIRECTS A CHANGE IN LOCATION OF THE PROPOSED UTILITY TO AVOID EXISTING STRUCTURES, THE ENGINEER WILL DETERMINE WHETHER THE CHANGE CONSTITUTES EXTRA WORK.
F. ANY UNDERGROUND STRUCTURES OR UTILITIES WHICH DO NOT OCCUPY THE SPACE REQUIRED FOR THE PROPOSED UTILITY WHICH ARE RELOCATED FOR CONVENIENCE OF THE CONTRACTOR SHALL BE PAID FOR BY THE CONTRACTOR.
G. WHEN THE PROPOSED UTILITY IS INSTALLED OR CROSSES BELOW AN EXISTING STRUCTURE, THE CONTRACTOR SHALL BACKFILL THE AREA WITH GRANULAR FILL AND COMPACT THE FILL WITH A MECHANICAL COMPACTOR IN LAYERS NOT TO EXCEED 6 INCHES IN DEPTH TO THE DENSITY OF THE UNDISTURBED SOIL.
H. ANY FAILURES OF EXISTING UTILITIES WITHIN ONE (1) YEAR OF THE COMPLETION OF THE PROJECT BECAUSE OF SETTLEMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
3.02 TRENCHING:
A. ALL EXCAVATING AND TRENCHING SHALL BE DONE IN ACCORDANCE WITH SAFETY PRACTICES FORMULATED AND ENFORCED BY THE WISCONSIN DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS, AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION.
B. TRENCHING SHALL INCLUDE REMOVAL AND SALVAGE OF TOPSOIL OR OTHER SURFACE UNLESS OTHERWISE STATED IN THE PLANS OR SPECIFICATIONS.
C. TRENCHES SHALL BE OF ADEQUATE WIDTH AND DEPTH TO ALLOW PROPER CONSTRUCTION OF PROPOSED UTILITIES. THE CONTRACTOR SHALL KEEP LOSS OF PAVEMENT IN IMPROVED STREETS TO A MINIMUM.
D. TRENCHING SHALL PROCEED IN A MANNER APPROVED BY THE ENGINEER, AND CONFORM TO LINE AND GRADE SHOWN ON THE PLANS AND ESTABLISHED BY THE ENGINEER.
E. THE BOTTOM 4 INCHES OF THE TRENCH SHALL BE DUG WITH HAND TOOLS AND SHAPED TO FIT THE CONTOUR OF THE PIPE. IN TRENCHES WHERE THE TOP OF THE PIPE IS MORE THAN 12 FEET BELOW THE FINISHED GROUND SURFACE, THE WIDTH OF EXCAVATION BELOW THE TOP OF THE PIPE SHALL BE NO MORE THAN 2 FEET WIDER THAN THE OUTSIDE DIAMETER OF THE PIPE, EXCEPT THAT THE MINIMUM TRENCH WIDTH SHALL BE 30 INCHES. THE EXCAVATION SHALL BE MADE TO CONFORM TO THE CONTOUR OF THE BOTTOM ONE-THIRD OF THE PIPE AND BELL HOLES SHALL BE MADE SUFFICIENT IN SIZE TO ELIMINATE ANY EXCESSIVE PRESSURE ON THE BELLS.
F. EVERY EFFORT SHALL BE MADE TO LIMIT THE DEPTH OF EXCAVATION TO THE REQUIRED DEPTH. EXCESS EXCAVATION BELOW THE REQUIRED LEVEL SHALL BE BACKFILLED AT THE CONTRACTOR'S EXPENSE WITH EARTH, SAND, GRAVEL OR CONCRETE, AS DIRECTED BY THE ENGINEER, AND SHALL BE COMPACTED BY A MEANS APPROVED BY THE ENGINEER TO THE DENSITY OF THE UNDISTURBED SOIL.
3.03 LIMITS OF OPEN TRENCH:
A. IN NO CASE SHALL THE CONTRACTOR BE ALLOWED TO OPEN ANY TRENCH MORE THAN 100 FEET IN ADVANCE OF THE PIPE LAYING UNLESS OTHERWISE PERMITTED BY THE ENGINEER. IN ALL CASES THE BACKFILLING SHALL BE KEPT WITHIN 300 FEET OF THE COMPLETED PIPELAYING.
3.04 UNSTABLE SOIL & EXTRA EXCAVATION:
A. ANY TIME UNSTABLE SOILS OR MATERIALS SUCH AS MUCK, SAWDUST, OR PEAT ARE ENCOUNTERED IN THE TRENCH THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE ENGINEER WILL DIRECT ADDITIONAL EXCAVATION AS REQUIRED AND PLACEMENT OF GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 02221.
B. EXTRA EXCAVATION WITHIN 12 INCHES OF THE BOTTOM OF THE PIPE SHALL BE CONSIDERED INCIDENTAL TO THE TRENCHING. EXTRA EXCAVATION EXCEEDING 12" BELOW THE BOTTOM OF THE PIPE WILL BE EXTRA WORK AND PAID FOR ACCORDINGLY.
3.05 EXCAVATION FOR STRUCTURES:
A. EXCAVATION FOR STRUCTURES SHALL BE SUFFICIENT TO PROVIDE ADEQUATE WORKING SPACE. CARE SHALL BE TAKEN NOT TO DISTURB THE SOIL BENEATH THE STRUCTURE. FINAL EXCAVATION TRIMMING SHALL BE DONE BY HAND. IF EXCESS EXCAVATION IS MADE OR THE MATERIAL BECOMES DISTURBED, THE SOIL BELOW THE STRUCTURE SHALL BE REPLACED AND COMPACTED WITH A MECHANICAL COMPACTOR IN LAYERS NOT TO EXCEED 6 INCHES.
3.06 ROCK EXCAVATION AND BLASTING:
A. ROCK SHALL BE DEFINED AS ANY MATERIAL, GEOLOGICALLY IN PLACE, AND OF A HARDNESS WHEN JUST EXPOSED TO PREVENT REMOVAL WITH A BACKHOE OF MODERN DESIGN, IN GOOD CONDITION AND NOT LESS THAN 1 1/2 CUBIC YARD CAPACITY. BURIED BOULDERS OR CONCRETE GREATER THAN 1 1/2 CUBIC YARD IN SIZE WILL BE CONSIDERED ROCK.
B. THE CONTRACTOR SHALL CONTACT THE ENGINEER WHEN ROCK IS ENCOUNTERED. THE ENGINEER WILL DETERMINE WHETHER THE MATERIAL IS ROCK.
C. WHERE ROCK OF EITHER LEDGE OR BOULDER FORMATION IS ENCOUNTERED, IT SHALL BE REMOVED BELOW THE BOTTOM OF THE PIPE AND REPLACED WITH SUITABLE MATERIAL PROPERLY COMPACTED. THE THICKNESS OF THE EARTH CUSHION SHALL BE 6 INCHES MINIMUM. THE TRENCH SUBGRADE SHALL THEN BE PREPARED ACCURATELY WITH HAND TOOLS. IN ROCK EXCAVATION, THE BOTTOM OF THE TRENCH SHALL NOT BE LESS THAN 30 INCHES WIDE OR EIGHTEEN (18) INCHES WIDER THAN INSIDE DIAMETER OF THE PIPE.
D. BLASTING FOR EXCAVATION WILL BE PERMITTED ONLY AFTER SECURING THE APPROVAL OF THE ENGINEER AND ONLY WHEN PROPER PRECAUTIONS TO PROTECT ADJACENT COMPLETED WORK, PERSONS, AND ADJACENT PROPERTY HAVE BEEN TAKEN. THE HOURS OF BLASTING WILL BE FIXED BY THE ENGINEER. ANY DAMAGES CAUSED BY BLASTING SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE. THE CONTRACTOR'S METHOD OF BLASTING SHALL CONFORM TO STATE LAWS AND MUNICIPAL ORDINANCES INCLUDING THE WISCONSIN DIVISION OF INDUSTRY, LABOR AND HUMAN RELATIONS. A CERTIFIED, LICENSED BLASTER SHALL BE PRESENT FOR ALL BLASTING OPERATIONS.
E. ALL NECESSARY PERMITS SHALL BE ACQUIRED BY THE CONTRACTOR PRIOR TO BLASTING.
3.07 PAYMENT:
A. ROCK EXCAVATION SHALL BE MEASURED BY THE CONTRACTOR AS ENCOUNTERED AT 20-FOOT INTERVALS. MEASUREMENTS SHALL BE RECORDED ON THE AS BUILT PLANS. THE ENGINEER WILL MAKE MEASUREMENTS AS NECESSARY TO VERIFY THE QUANTITY OF ROCK. THE QUANTITY OF WORK FOR WHICH PAYMENT WILL BE MADE SHALL BE DETERMINED BY MULTIPLYING THE WIDTH OF THE TRENCH OUTSIDE OF ANY SHEETING BY THE DEPTH REMOVED FROM THE SURFACE OF THE ROCK TO THE REQUIRED DEPTH BELOW PIPE INVERT. IN UNSHEETED TRENCHES, THE WIDTH PAID SHALL BE EIGHTEEN (18) INCHES GREATER THAN THE INSIDE DIAMETER OF THE PIPE BUT NOT LESS THAN THIRTY (30) INCHES.
B. THE PRICE BID FOR ROCK PER CUBIC YARD SHALL BE FULL COMPENSATION FOR ALL DRILLING, BLASTING, LOADING, HAULING AND ALL LABOR AND INCIDENTALS NECESSARY TO REMOVE AND DISPOSE OF ROCK AND THE FURNISHING AND PLACING OF A SAND BEDDING. IF NO PRICE IS STATED IN THE CONTRACT, ROCK EXCAVATION SHALL BE CONSIDERED EXTRA WORK.
3.08 DEWATERING TRENCHES:
A. ALL PROJECTS WHERE DEWATERING IS NEEDED REQUIRE A WPODES DISCHARGE PERMIT. UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS, THIS PERMIT WILL BE OBTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE WPODES DISCHARGE PERMIT.
B. DURING THE TRENCHING AND LAYING OF THE PIPE, THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL WATER OR DRAINAGE SEEPING INTO THE TRENCHES BY THE EMPLOYMENT OF SUITABLE FLUMES FOR THE CONDUCTING OF THE WATER AWAY FROM THE WORK AND BY DRAINING ALL NECESSARY PUMPING AND BAILING. NO SAND, WATER, EARTH OR OTHER MATERIAL SHALL BE ALLOWED TO ENTER THE PIPE. NO BRICKWORK, CONCRETE, SEWER PIPE, OR WATERMANS SHALL BE LAID IN WATER OR WHEN, IN THE OPINION OF THE ENGINEER, TRENCH CONDITIONS ARE UNSUITABLE.
C. THE DISCHARGE FROM TRENCH DEWATERING PUMPS SHALL BE CONDUCTED TO NATURAL DRAINAGE CHANNELS, STORM SEWER DRAINS OR AS REQUIRED BY THE WPODES DISCHARGE PERMIT.
D. DEWATERING OTHER THAN WELL POINTING OR WELLS APPROVED IN LIEU OF WELL POINTING SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION.
(CONTINUED)

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Table with columns for revision tracking: NO., DATE, BY, APP., C&I, BSF, and RELEASED FOR. Includes a 'RELEASED FOR...' field.

GREAT LAKES CHEESE logo and address: 2200 ENTERPRISE AVENUE, LA CROSSE, WISCONSIN 54603. Includes 'SPECIFICATIONS - SHEET 1'.

DENNIS GROUP logo and contact information: Plan • Design • Engineer • Build • Start-Up. Includes website dennisgroup.com and locations: United States • Canada • Brazil • Portugal.

DRAWING NO. C6.00 and drawing number 5590.

31 23 33 - TRENCHING, BEDDING, BACKFILLING AND COMPACTION OF PIPE WORK (CONTINUED)

3.09 WELL POINTING:
A. WHERE, IN THE OPINION OF THE ENGINEER, THE TRENCH CANNOT BE KEPT DRY BY OTHER EFFECTIVE MEANS...
B. WHEN WELL POINTING IS REQUIRED, THE CONTRACTOR MAY USE WELLS INCLUDING A CASING AND PUMP IF APPROVED BY THE ENGINEER.
C. WHEN NECESSARY TO PUMP MORE THAN 70 GPM, WELLS ARE CONSIDERED HIGH CAPACITY WELLS...
D. REQUIREMENTS OF THE PREVIOUS SECTION REGARDING WPDES DISCHARGE PERMITS SHALL ALSO APPLY TO THIS SECTION.
3.10 SHEETING:
A. WHERE IT IS NECESSARY TO PROTECT NEARBY FACILITIES OR PAVEMENT SURFACE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TIGHT SHEETING...
B. PREVENT SOIL FROM ENTERING THE TRENCH EITHER BELOW OR THROUGH SUCH SHEETING...
3.11 BEDDING:
A. CLASS "B" BEDDING SHALL NORMALLY BE USED FOR ALL FLEXIBLE PIPE AND SHALL BE CONSIDERED INCIDENTAL CLASS "B" BEDDING...
B. CLASS "C" BEDDING SHALL NORMALLY BE USED FOR ALL RIGID PIPE AND SHALL BE CONSIDERED INCIDENTAL CLASS "C" BEDDING...
3.12 BACKFILL:
A. BACKFILL TRENCH IMMEDIATELY AFTER INSTALLATION OF THE PIPE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
B. BACKFILLING MAY BE COMPLETED BY MECHANICAL MEANS...
3.13 TRENCH COMPACTION:
A. COMPACT ALL TRENCHES BY MECHANICAL COMPACTION.
B. MECHANICAL COMPACTION SHALL CONSIST OF MECHANICALLY COMPACTING THE BACKFILL IN SIX-INCH LAYERS...
3.14 EXCESS MATERIAL:
A. EXCESS MATERIAL FOLLOWING BACKFILLING SHALL BE DISPOSED OF BY THE CONTRACTOR AT A SITE DIRECTED BY THE ENGINEER...

31 25 00 - EROSION CONTROL

SECTION 31 25 00 - EROSION CONTROL
PART 1 - GENERAL
1.01 SECTION INCLUDES:
A. EROSION AND SEDIMENT CONTROL MEASURES.
1.02 REFERENCE:
A. WISCONSIN DNR STORM WATER TECHNICAL STANDARDS
PART 2 - PRODUCTS
2.01 MATERIALS:
A. MATERIALS USED SHALL CONFORM TO THE REQUIREMENTS AS SPECIFIED IN THE WISCONSIN DNR STORM WATER TECHNICAL STANDARDS.
2.02 EROSION BLANKET:
A. STRAW FIBER MATRIX SEWN BETWEEN TWO PHOTO-DEGRADABLE NETS.
PART 3 - EXECUTION
3.01 ALL CONTRACTORS INSTALLING PIPELINE SHALL OBTAIN THE WISCONSIN DNR STORM WATER TECHNICAL STANDARDS.
3.02 ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE WISCONSIN DNR STORM WATER TECHNICAL STANDARDS.
3.03 ALL SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL.
3.04 PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES SHALL BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED...
3.05 AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED FOR INTEGRITY...
3.06 SEDIMENT CONTROL MEASURES SHALL NOT BE REMOVED UNTIL THE AREAS SERVED HAVE ESTABLISHED VEGETATIVE COVER.
3.07 GRAVEL MATS SHALL BE INSTALLED AT ALL CONSTRUCTION SITE EXITS TO PREVENT TRACKING OF SOIL.
3.08 TRACKED SOIL SHALL BE COLLECTED FROM PAVED ROADS LOCATED NEAR THE CONSTRUCTION SITE.
3.09 ALL TRENCH WATER SHALL BE DISCHARGED INTO A SETTLING BASIN OR FILTERING DEVICE PRIOR TO RELEASE INTO STORM SEWER.
3.10 STORM SEWER COLLECTION BASINS SHALL BE PROTECTED FROM RUNOFF BY ENCLOSING COLLECTION BASINS WITH STRAW BALE OR FABRIC FILTER FENCING.
3.11 OVERLAND FLOW SHALL BE PREVENTED FROM LEAVING THE WORK SITE UNTREATED BY INSTALLING STRAW BALE OR FABRIC FILTER FENCING PARALLEL TO THE CONTOURS LOCATED DOWNHILL FROM THE WORK AREA.
3.12 SEDIMENT CONTROL FOR PIPELINE CONSTRUCTION:
A. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
B. IMMEDIATELY FOLLOWING PIPE INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY.
END OF SECTION 31 25 00

32 11 16 - GRANULAR SUBBASE COURSE

SECTION 32 11 16 - GRANULAR SUBBASE COURSE
PART 1 - GENERAL
1.01 SCOPE OF WORK:
A. APPLICABLE PROVISIONS OF DIVISIONS 0 AND 1 SHALL GOVERN WORK UNDER THIS SECTION.
B. THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF A FOUNDATION COURSE OF GRANULAR MATERIAL...
PART 2 - PRODUCTS
2.01 GENERAL:
A. AGGREGATES FURNISHED FOR OR USED IN THE WORK SHALL CONFORM TO THE QUALITY AND GRADATION REQUIREMENTS HEREINAFTER SET FORTH.
2.02 GRADATION:
B. THE MAXIMUM SIZE OF ANY GRAVEL, STONE OR OTHER BROKEN OR FRAGMENTED MATERIAL USED FOR SUBBASE COURSE SHALL NOT BE GREATER IN ANY DIMENSION THAN THREE-QUARTERS OF THE THICKNESS OF SUCH SUBBASE COURSE...
PART 3 - EXECUTION
3.01 PREPARATION OF FOUNDATION:
A. THE SUBGRADE SHALL BE CONSTRUCTED TO CONFORM TO THE LINES AND GRADES NECESSARY TO COMPLETE THE PAVEMENT CROSS SECTION SPECIFIED ON THE PLANS...
B. AREAS OF YIELDING OR UNSTABLE MATERIALS SHALL BE EXCAVATED TO SUCH DEPTH AND BACKFILLED WITH SUITABLE MATERIAL AS ORDERED BY THE ENGINEER.
3.02 SPREADING:
A. GRANULAR SUBBASE MATERIAL SHALL NOT BE PLACED ON A SUBGRADE THAT IS SOFT OR SPONGY OR COVERED WITH ICE OR SNOW.
B. THE SPREADING OPERATION SHALL NOT CAUSE DISTURBANCE OR RUTTING OF THE SUBGRADE OR FOUNDATION SOILS...
3.03 COMPACTION:
A. THE COMPACTION SHALL BE PERFORMED BY SPECIALIZED COMPACTION EQUIPMENT...
B. THE GRANULAR SUBBASE COURSE SHALL BE COMPACTED AT OPTIMUM MOISTURE TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY...
C. THE SUBGRADE SHALL BE COMPACTED BY THE ABOVE METHODS...
3.04 TOLERANCE:
A. THE TOP OF THE GRANULAR SUBBASE COURSE SHALL BE OF SUCH SMOOTHNESS THAT WHEN TESTED WITH A STRINGLINE PARALLEL WITH AND PERPENDICULAR TO THE CENTERLINE...
3.05 TEST ROLLING:
A. THE ENGINEER RESERVES THE RIGHT TO ORDER ALL OR ANY PORTION OF THE SUBGRADE TO BE TEST-ROLLED WITH APPROPRIATE EQUIPMENT...
3.06 DUST ABATEMENT:
A. THE CONTRACTOR SHALL MINIMIZE BLOWING DUST BY APPLICATION OF WATER OR OTHER DUST CONTROL AGENTS APPROVED BY THE ENGINEER...
END OF SECTION 32 11 16

32 11 23 - CRUSHED AGGREGATE BASE COURSE

SECTION 32 11 23 - CRUSHED AGGREGATE BASE COURSE
PART 1 - GENERAL
1.01 SECTION INCLUDES:
A. THIS ITEM SHALL CONSIST OF A DENSE COMPACTED BASE COURSE COMPOSED OF ONE OR MORE COURSES OR LAYERS OF COARSE AGGREGATE...
PART 2 - PRODUCTS
2.01 GENERAL:
A. AGGREGATES FURNISHED FOR OR USED IN THE WORK SHALL CONFORM TO THE QUALITY AND GRADATION REQUIREMENTS HEREINAFTER SET FORTH.
2.02 PERCENT OF WEAR:
A. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT, THE AGGREGATE SHALL HAVE A PERCENTAGE OF WEAR OF NOT MORE THAN 50...
2.03 LIQUID AND PLASTIC LIMITS:
A. THE AGGREGATE, INCLUDING ANY BLENDED FILLER, SHALL HAVE A LIQUID LIMIT OF NOT MORE THAN 25 AND A PLASTICITY INDEX OF NOT MORE THAN 6...
2.04 PERCENT FRACTURES:
A. AT LEAST 45 PERCENT, BY COUNT, OF THE NUMBER OF PARTICLES OF AGGREGATE RETAINED ON THE NO. 4 SIEVE SHALL HAVE AT LEAST ONE FRACTURED FACE.
2.05 SOUNDNESS:
A. WHEN THE FRACTION OF THE AGGREGATES ON THE NO. 4 SIEVE IS SUBJECTED TO 5 CYCLES OF THE SODIUM SULFATE SOUNDNESS TEST...
PART 3 - EXECUTION
3.01 PREPARATION OF FOUNDATION:
A. THE SUBGRADE SHALL BE CONSTRUCTED TO CONFORM TO THE LINES AND GRADES NECESSARY TO COMPLETE THE PAVEMENT CROSS SECTION SPECIFIED ON THE PLANS...
B. AREAS OF YIELDING OR UNSTABLE MATERIALS SHALL BE EXCAVATED TO SUCH DEPTH AND BACKFILLED WITH SUITABLE MATERIAL AS ORDERED BY THE ENGINEER.
3.02 SPREADING:
A. CRUSHED AGGREGATE BASE MATERIAL SHALL NOT BE PLACED ON A SUBGRADE THAT IS SOFT OR SPONGY OR COVERED WITH ICE OR SNOW.
B. THE SPREADING OPERATION SHALL NOT CAUSE DISTURBANCE OR RUTTING OF THE SUBGRADE OR FOUNDATION SOILS...
C. SUCCESSIVE LIFTS SHALL NOT EXCEED 6 INCHES IN COMPACTED THICKNESS...
3.03 COMPACTION:
A. EQUIPMENT USED FOR COMPACTION SHALL BE OF THE ROLLING TYPE, VIBRATORY TYPE, OR A COMBINATION OF BOTH TYPES...
B. THE CRUSHED AGGREGATE BASE MATERIAL SHALL BE COMPACTED AT OPTIMUM MOISTURE TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY...
C. THE SUBGRADE SHALL BE COMPACTED BY THE ABOVE METHODS...
3.04 TOLERANCE:
A. THE TOP OF THE BASE COURSE SHALL BE OF SUCH SMOOTHNESS THAT WHEN TESTED WITH A STRINGLINE PARALLEL WITH AND PERPENDICULAR TO THE CENTERLINE...
3.05 TEST ROLLING:
A. THE ENGINEER RESERVES THE RIGHT TO ORDER ALL OR ANY PORTION OF THE SUBGRADE TO BE TEST-ROLLED WITH APPROPRIATE EQUIPMENT...
3.06 DUST ABATEMENT:
A. THE CONTRACTOR SHALL MINIMIZE BLOWING DUST BY APPLICATION OF WATER OR OTHER DUST CONTROL AGENTS APPROVED BY THE ENGINEER...
END OF SECTION 32 11 23

32 13 00 - CONCRETE WORK

SECTION 32 13 00 - CONCRETE WORK
PART 1 - GENERAL
1.01 DESCRIPTION OF WORK:
A. THE EXTENT OF THE CONCRETE WORK IS AS SHOWN ON THE PLANS AND AS STATED IN THE SPECIFICATIONS.
1.02 QUALITY ASSURANCE:
A. CODES AND STANDARDS, COMPLY WITH PROVISIONS OF FOLLOWING CODES, SPECIFICATIONS AND STANDARDS...
PART 2 - PRODUCTS
2.01 FORM MATERIALS:
A. FORMS FOR EXPOSED FINISH CONCRETE: UNLESS OTHERWISE INDICATED, CONSTRUCT FORMWORK FOR EXPOSED CONCRETE SURFACES FROM PLYWOOD, METAL, METAL-FRAMED PLYWOOD, FACED OR OTHER ACCEPTABLE PANEL-TYPE MATERIALS...
B. FORMS FOR UNEXPOSED FINISH CONCRETE: PLYWOOD, LUMBER, METAL OR OTHER MATERIAL APPROVED BY ENGINEER...
2.02 REINFORCED MATERIALS:
A. REINFORCING BARS (REBAR): ANSI/ASTM A 615, GRADE 60, DEFORMED.
B. WELDED WIRE FABRIC: ASTM A 185
C. SUPPORTS FOR REINFORCEMENT: PROVIDE SUPPORTS FOR REINFORCEMENT INCLUDING BOLSTERS, CHAIRS, SPACERS AND OTHER DEVICES...
2.03 CONCRETE MATERIALS:
A. PORTLAND CEMENT: ANSI/ASTM C 150, TYPE 1, UNLESS OTHERWISE ACCEPTABLE BY THE ENGINEER
B. NORMAL WEIGHT AGGREGATES: ANSI/ASTM C 33, AND AS HEREIN SPECIFIED...
C. WATER: POTABLE.
D. AIR-ENTRAINING ADMIXTURE: ANSI/ASTM C 260.
2.04 PORTPORTIONING AND DESIGN OF CONCRETE MIXES:
A. DESIGN MIXES TO PROVIDE NORMAL WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES...
B. ADMIXTURES:
I. USE AIR-ENTRAINING ADMIXTURE IN EXTERIOR EXPOSED CONCRETE...
A. 3% TO 7% FOR MAXIMUM 3" AGGREGATE.
C. SLUMP LIMITS: PROPORTION AND DESIGN MIXES TO RESULT IN CONCRETE SLUMP AT POINT OF PLACEMENT AS FOLLOWS:
I. NOT LESS THAN 1" AND NOT MORE THAN 4"
D. WATER REDUCING ADMIXTURES AND FLYASH MAY BE USED IF APPROVED BY THE ENGINEER IN WRITING.
2.05 EXPANSION JOINT MATERIAL:
A. EXPANSION JOINT MATERIAL SHALL BE ASPHALT IMPREGNATED FIBERBOARD CONFORMING TO ASTM D 1751.
2.06 CURING COMPOUND
A. CURING AND SEALING COMPOUND SHALL BE ACHRO SEAL 0800 OR APPROVED EQUAL.
PART 3 - EXECUTION
3.01 FORMS:
A. DESIGN, ERECT, SUPPORT, BRACE AND MAINTAIN FORMWORK TO SUPPORT VERTICAL AND LATERAL LOADS...
B. DESIGN FRAMEWORK TO BE READILY REMOVABLE WITHOUT IMPACT, SHOCK OR DAMAGE TO CAST-IN-PLACE CONCRETE SURFACES AND ADJACENT MATERIALS.
C. CONSTRUCT FORMS TO SIZES, SHAPES, LINES AND DIMENSIONS SHOWN, AND TO OBTAIN ACCURATE ALIGNMENT, LOCATION, GRADES, LEVEL AND PLUMB WORK...
3.02 PLACING REINFORCEMENT:
A. COMPLY WITH CONCRETE REINFORCING STEEL INSTITUTES RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS...
B. ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT BY FORMWORK...
3.03 CONCRETE PLACEMENT:
A. GENERAL: COMPLY WITH ACI 304, AND AS HEREIN SPECIFIED.
B. DEPOSIT CONCRETE CONTINUOUSLY OR IN LAYERS OF SUCH THICKNESS THAT NO CONCRETE WILL BE PLACED ON CONCRETE WHICH HAS HARDENED SUFFICIENTLY TO CAUSE THE FORMATION OF SEAMS OR WEAKNESSES...
C. COLD WEATHER PLACING: PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH WHICH COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES...
D. WHEN AIR TEMPERATURE HAS FALLEN TO OR IS EXPECTED TO FALL BELOW 40F (20C) AT POINT OF PLACEMENT.
E. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW...
F. DO NOT USE CALCIUM CHLORIDE, SALT AND OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS...
3.04 FINISH OF FORMED SURFACES:
A. SMOOTH FORM FINISH (SMFM-F): FOR FORMED CONCRETE SURFACES EXPOSED TO VIEW...
B. NON-SLIP BROOM FINISH: APPLY NON-SLIP BROOM FINISH TO EXTERIOR CONCRETE PLATFORMS, STEPS AND RAMPS...
C. IMMEDIATELY AFTER TROWEL FINISHING, SLIGHTLY ROUGHEN CONCRETE SURFACE BY BROOMING WITH FIBER BRISTLE BROOM PERPENDICULAR TO MAIN TRAFFIC ROUTE...
(CONTINUED)

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Table with columns for PLANING REVIEW, CGJ, BSF, DATE, and BY. Includes a grid for tracking review status.

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33 40 00 - STORM SEWER COLLECTION SYSTEM

SECTION 33 40 00 - STORM SEWER COLLECTION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. EXTENT OF STORM SEWER COLLECTION SYSTEM WORK IS SHOWN ON THE DRAWINGS, AND INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:
 - i. STORM SEWER CONDUITS
 - ii. INLETS, FRAMES AND GRATINGS
 - iii. CULVERTS

1.02 QUALITY ASSURANCE:

- A. INSTALLER: A FIRM SPECIALIZING AND EXPERIENCED IN SEWER COLLECTION SYSTEM WORK FOR NOT LESS THAN TWO YEARS.

1.03 SHOP DRAWINGS:

- A. SUBMIT SHOP DRAWINGS FOR UNDERGROUND STRUCTURES, ACCESSORIES, FITTINGS, AND CONNECTIONS.

1.04 PIPE STRENGTH

- A. PIPE SUPPLIER SHALL VERIFY THAT PIPE IS OF ADEQUATE STRENGTH FOR PROJECT CONDITIONS.

PART 2 - PRODUCTS

2.01 PIPE MATERIALS:

- A. GENERAL: FURNISH ELLS, TEES, REDUCING TEES, WYES, COUPLINGS, INCREASERS, CROSSES, TRANSITIONS AND END CAPS OF THE SAME TYPE AND CLASS OF MATERIAL AS CONDUIT, OR OF MATERIAL HAVING EQUAL OR SUPERIOR PHYSICAL AND CHEMICAL PROPERTIES AS ACCEPTABLE TO THE ENGINEER.

2.02 STORM SEWER MATERIALS:

THE FOLLOWING STORM SEWER MATERIALS ARE ACCEPTABLE ON THIS PROJECT:

- A. REINFORCED CONCRETE PIPE (RCP): ASTM C 76, CLASS IV, WITH MODIFIED TONGUE_AND_GROOVE COMPRESSION GASKET JOINTS COMPLYING WITH ASTM C 443.
 - i. THE CLASS OF PIPE SHALL BE AS SHOWN ON THE PLANS OR STATED IN THE PROPOSAL.
- B. SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE:
 - i. PIPE AND FITTINGS SHALL BE MADE OF POLYETHYLENE (PE) COMPOUNDS WHICH CONFORM WITH THE REQUIREMENTS OF CELL CLASS 324420C (MIN.), AS DEFINED AND DESCRIBED IN ASTM D3350, EXCEPT THAT THE CARBON BLACK CONTENT SHALL NOT EXCEED 5%. PIPE SHALL BE ADS N-12 OR APPROVED EQUAL.
 - ii. MINIMUM PARALLEL PLATE PIPE STIFFNESS SHALL BE 50 PSI FOR STORM SEWERS 12" OR LESS IN DIAMETER PER ASTM TEST METHOD D-2412.
 - iii. JOINTS SHALL BE MADE WITH SPLIT COUPLINGS, CORRUGATED TO ENGAGE THE PIPE CORRUGATIONS, AND SHALL ENGAGE A MINIMUM OF 4 CORRUGATIONS, 2 ON EACH SIDE OF THE PIPE JOINT. A NEOPRENE GASKET SHALL BE UTILIZED WITH THE COUPLING TO PROVIDE A SOL-TIGHT JOINT.
 - iv. INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM RECOMMENDED PRACTICE D-2321.
 - v. STORM SEWERS UP TO 12" DIAMETER SHALL CONFORM TO AASHTO STANDARD M 252-90. STORM SEWERS 12" TO 36" DIAMETER SHALL CONFORM TO AASHTO STANDARD M 254-90.
- C. PVC SEWER PIPE: PVC STORM SEWER PIPE SHALL BE A CONTECH A-2000 FOR DIAMETERS 12" TO 18".
 - i. PVC STORM SEWER PIPE SHALL BE SCHEDULE 40 PVC FOR DIAMETERS LESS THAN 12".
 - ii. PVC STORM SEWER PIPE AND FILLINGS SHALL CONFORM TO ASTM F949.
 - iii. INSTALLATION SHALL CONFORM TO ASTM D-2321-83A.

2.03 CONCRETE MANHOLES AND INLETS:

- A. MANHOLES GENERAL: USE PRECAST CONCRETE MANHOLES EXCEPT WHEN PRECAST SHAPES ARE NOT AVAILABLE TO CONFORM TO THE NEEDS OF THE PROJECT. FURNISH LIFTING INSERTS, FURNISH BOOTS FOR PIPE 12" OR LESS.
- B. CONCRETE BASE: USE PRECAST OR CAST-IN PLACE BASES. USE CONCRETE WHICH WILL ATTAIN A 28-DAY COMPRESSIVE STRENGTH OF NOT LESS THAN 3500 PSI.
- C. ADJUSTING RINGS: ALL MANHOLES AND INLETS SHALL HAVE A MINIMUM OF 6 INCHES OF ADJUSTING RINGS WITH THE CASTING AT PLAN GRADE.
- D. PRECAST CONCRETE MANHOLES: THESE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 478 OR AASHTO M199 AND IN ACCORDANCE WITH STANDARD DETAILS ON PLANS. TOPS SHALL BE ECCENTRIC CONES. TOP SECTION OF A PRECAST MANHOLE BELOW THE CONE SHALL BE AN 18 INCH HIGH SECTION.
- E. PRECAST MANHOLE JOINTS: JOINTS IN PRECAST MANHOLES SHALL BE SEALED WITH KENT SEAL #2 OR RAM_NEX RUBBER GASKET. MORTAR JOINTS MAY BE USED ONLY IF APPROVED BY THE ENGINEER IN WRITING.
- F. INLETS: PROVIDE INLETS OF SIZES AND SHAPES INDICATED ON THE DETAIL DRAWINGS. SIZE INLETS AS PER PLAN. USE PRECAST CONCRETE SECTIONS EXCEPT WHERE SECTIONS ARE NOT AVAILABLE TO MEET SHAPE REQUIRED. PRECAST SECTIONS SHALL MEET ASTM C478 OR AASHTO M199.

2.04 METAL ACCESSORIES:

- A. MANHOLE AND INLET FRAMES AND COVERS: GREY CAST IRON, ASTM A 48, CLASS 30 B, NEENAH FOUNDRY AS SPECIFIED IN THE PLAN DETAILS AND SCHEDULES, OR APPROVED EQUAL.
- B. MANHOLE STEPS: DUCTILE IRON NEENAH FOUNDRY R-1981-W OR APPROVED EQUAL, INTEGRALLY CAST INTO MANHOLE SIDEWALLS.
- C. INLET FRAMES AND GRATINGS: AS SPECIFIED ON THE DETAIL DRAWINGS AND SCHEDULES.

PART 3 - EXECUTION

3.01 INSTALLATION OF CONDUIT:

- INSTALL CONDUIT IN ACCORDANCE WITH STATE OF WISCONSIN CODES, EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE INDICATED.
- A. ALIGNMENT AND GRADE: ENGINEER WILL PROVIDE LINE AND GRADE ON STAKES AT A CONVENIENT OFFSET. CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSFERRING LINE AND GRADE TO THE PIPE.
 - i. A LASER MAY BE USED TO TRANSFER LINE AND GRADE, PROVIDING A CHECK ON GRADE IS MADE AT MAXIMUM 100 FOOT INTERVALS.
 - ii. PIPE GRADE SHALL CONFORM TO PLAN GRADE UNLESS MODIFIED BY ENGINEER.
 - iii. NOTIFY ENGINEER OF ANY INCONSISTENT GRADES.
- B. INSPECT PIPE BEFORE INSTALLATION TO DETECT APPARENT DEFECTS. MARK DEFECTIVE MATERIALS WITH WHITE PAINT AND PROMPTLY REMOVE FROM SITE.
- C. LAY PIPE BEGINNING AT LOW POINT OF A SYSTEM, TRUE TO GRADES AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT.
 - i. PIPE SHALL BE LAID ON SOLID MATERIAL SHAPED TO THE CONTOUR OF THE PIPE. THE BELL ENDS OF ALL PIPES ARE TO BE LAID UP GRADE. ALL PIPES SHALL BE LAID WITH ENDS BUTTING AND TRUE TO LINE AND GRADE. GRADE WHICH HAS IN ANY WAY BEEN DISTURBED OR WHICH DOES NOT CONFORM TO SAID LINE AND GRADE BEFORE FINAL ACCEPTANCE SHALL BE REMOVED AND RELAID BY THE CONTRACTOR AT HIS EXPENSE.
 - ii. GRADE VARIATION OF 0.1 FEET OR MORE WILL REQUIRE REPLACEMENT OF PIPE AT PROPER GRADE.
 - iii. PIPES SHALL BE FITTED TOGETHER AND MATCHED SO WHEN LAID THEY WILL FORM A SEWER WITH A SMOOTH AND UNIFORM INVERT.
- D. INSTALL GASKETS AND FORMS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR USE OF LUBRICANTS, CEMENTS, AND OTHER SPECIAL INSTALLATION REQUIREMENTS.
- E. PIPE PLUGS: THE ENDS OF THE PIPE LINE MUST BE PROTECTED FROM THE ENTRANCE OF ALL EARTH OR OTHER MATERIALS. THE INSIDE OF THE SEWER MUST BE KEPT FREE FROM ALL SUBSTANCES BY MEANS APPROVED BY THE ENGINEER. EACH SECTION OF PIPE MUST BE LAID CONTINUOUSLY BETWEEN MANHOLES.
- F. CONCRETE PIPE:
 - i. INSTALL IN ACCORDANCE WITH APPLICABLE PROVISIONS OF AMERICAN CONCRETE PIPE ASSOCIATION "CONCRETE PIPE FIELD MANUAL", UNLESS OTHERWISE INDICATED.
 - ii. PLACE CIRCULAR CONCRETE PIPE WITH ELLIPTICAL REINFORCING SO THAT REFERENCE LINES INDICATING TOP OF PIPE ARE NOT MORE THAN FIVE DEGREES FROM VERTICAL PLANE THROUGH LONGITUDINAL AXIS OF PIPE.
- G. CLEANING CONDUIT: CLEAN INTERIOR OF CONDUIT OF DIRT AND OTHER SUPERFLUOUS MATERIAL AS WORK PROGRESSES. MAINTAIN SWAB OR DRAG IN LINE AND PULL PAST EACH JOINT AS IT IS COMPLETED. IF REQUIRED, IN LARGE, ACCESSIBLE CONDUIT, BRUSHES AND BROOMS MAY BE USED FOR CLEANING. PLACE PLUGS AT ENDS OF UNCOMPLETED CONDUIT AT END OF DAY OR WHENEVER WORK STOPS. FLUSH LINES BETWEEN MANHOLES AND REMOVE ALL DEBRIS IF REQUIRED TO CLEAN PIPE. WHEN CLEANING, NO SOLID MATERIAL WILL BE ALLOWED TO ENTER THE EXISTING COLLECTION SYSTEM OR TREATMENT FACILITY WITHOUT WRITTEN AUTHORIZATION BY THE ENGINEER.
- H. CLOSING ABANDONED UTILITIES:
 - i. CLOSE OPEN ENDS OF ABANDONED UNDERGROUND UTILITIES WHICH ARE INDICATED TO REMAIN IN PLACE. PROVIDE SUFFICIENTLY STRONG CLOSURES TO WITHSTAND HYDRO-STATIC OR EARTH PRESSURE WHICH MAY RESULT AFTER ENDS OF ABANDONED UTILITIES HAVE BEEN CLOSED.

33 40 00 - STORM SEWER COLLECTION SYSTEM

- i. CLOSE OPEN ENDS OF CONCRETE OR MASONRY UTILITIES WITH NOT LESS THAN 8" THICK BRICK MASONRY BULKHEADS.
- ii. CLOSE OPEN ENDS OF PIPE WITH THREADED METAL CAPS, PLASTIC PLUGS, OR OTHER ACCEPTABLE METHODS SUITABLE FOR SIZE AND TYPE OF PIPE BEING CLOSED. WOOD PLUGS ARE NOT ACCEPTABLE.

3.02 INSTALLATION OF MANHOLES AND INLETS:

- A. GENERAL: MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLAN DETAILS. MANHOLE BASES SHALL BE PRECAST CONCRETE. THE SUBGRADE SHALL BE LEVELLED AND COMPACTED IF DISTURBED PRIOR TO PLACING THE BASE.
- B. THE CONTRACTOR SHALL MORTAR ALL PIPE HOLES AND JOINTS ON PRECAST MANHOLES. ALL MANHOLES SHALL BE CONSTRUCTED WATER TIGHT.
- C. INVERT CHANNELS SHALL BE SMOOTH AND CONFORM TO THE GRADE OF THE PIPE. WHENEVER POSSIBLE, THE PIPE SHALL BE LAID THROUGH THE MANHOLE AND THE TOP OF THE PIPE BROKEN OUT AFTER THE CONCRETE HAS HARDENED.
- D. MANHOLES SHALL BE BUILT TO THE GRADE SHOWN ON THE PLANS OR GRADE SET BY THE ENGINEER.

3.03 PRECAST CONCRETE MANHOLES:

- A. PLACE PRECAST CONCRETE SECTIONS AS SHOWN ON DRAWINGS. USE EPOXY BONDING COMPOUND WHERE MANHOLE STEPS ARE PRECAST INTO MANHOLE WALLS IF NECESSARY. INSTALL WATERPROOF JOINTS USING KENT SEAL NO. 2 OR RAM_NEX RUBBER GASKET JOINTS.
- B. INLETS: CONSTRUCT INLETS TO THE SIZES AND SHAPES INDICATED ON PLANS AND DETAILS. ALL APPLICABLE MANHOLE SPECIFICATIONS SHALL APPLY TO INLET.
- C. SET CAST IRON FRAMES AND GRATINGS TO ELEVATIONS SHOWN ON THE PLANS OR AS SET BY THE ENGINEER.

3.04 INSPECTION AND TESTING:

- A. INSPECTION: UPON COMPLETION OF EACH SECTION OF SEWER IN THE PROJECT, THE CONTRACTOR SHALL CLEAN AND TEST THE SEWER IN THE PRESENCE OF THE ENGINEER OR INSPECTOR.
- B. ALL STORM SEWERS SHALL BE TESTED FOR EXCESSIVE INFILTRATION AND SAND LEAKAGE. ANY SEWER WHICH LEAKS SAND SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. IF, IN THE JUDGEMENT OF THE ENGINEER, THE INFILTRATION WILL CAUSE A CONTINUED MAINTENANCE PROBLEM, THE SEWER SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- C. ALIGNMENT: WHEN A LIGHT IS PLACED AT THE INVERT IN ONE MANHOLE, A CIRCLE OF LIGHT SHALL BE VISIBLE FROM THE ADJACENT MANHOLE. ANY SEWER WHICH DOES NOT MEET THIS REQUIREMENT SHALL BE DEEMED IMPERFECT AND SHALL BE TELEVIEWED AT THE CONTRACTOR'S EXPENSE WITHIN ONE YEAR OF THE COMPLETION OF THE SEWER. THE SEWER SHALL BE REPAIRED BY THE CONTRACTOR SO THAT IT IS ACCEPTABLE.

END OF SECTION 33 40 00

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2200 ENTERPRISE AVENUE
LA CROSSE, WISCONSIN



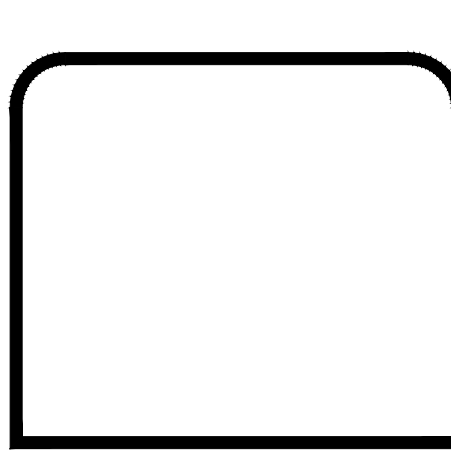
SPECIFICATIONS - SHEET 5

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