

SWPPP NARRATIVE

CONSTRUCTION ACTIVITY INFORMATION

PROJECT NAME: NORTH POINTE TOWNHOMES
 PROJECT LOCATION: SW¼ SECTION 27-T103N-R18W
 CITY OF AUSTIN
 LANSING TOWNSHIP, MOWER COUNTY
 PROJECT SIZE: 6.5 DISTURBED ACRES
 PROJECT TYPE: STREET & UTILITY CONSTRUCTION, MULT-FAMILY HOUSING
 MAJOR SOIL TYPE: HAVANAA SILT LOAM
 DOWAGIAC SILT LOAM
 CUMULATIVE IMPERVIOUS SURFACE:
 EXISTING - 0.0 ACRES
 POST CONSTRUCTION - 2.02 ACRES (84858 SF)
 DIRECT DISCHARGE FROM IMPERVIOUS SURFACE: 0 ACRES
 RECEIVING WATERS: WETLAND IN SW¼ 27-T103N-R18W
 DATES OF CONSTRUCTION: FALL 2017-SUMMER 2018
 OWNER: THREE RIVERS COMMUNITY ACTION
 SUSAN STRANDBERG
 1414 NORTH STAR DRIVE
 ZUMBROTA MN 55992
 507-732-8557
 UNDERGROUND UTILITY CONTRACTOR:
 TBD
 PARTY RESPONSIBLE FOR LONG TERM O&M:
 THREE RIVERS COMMUNITY ACTION
 SUSAN STRANDBERG
 1414 NORTH STAR DRIVE
 ZUMBROTA MN 55992
 507-732-8557

GENERAL SITE INFORMATION

IMMEDIATELY FOLLOWING GRADING OF SLOPES OF 3:1 OR GREATER WHICH DRAIN TO WATERS OF THE STATE, SLOPES WILL BE STABILIZED WITH WOOD FIBER BLANKET (OR OTHER METHOD APPROVED BY THE ENGINEER) OVER APPROVED SEED MIXTURE AND A MINIMUM OF 4" OF TOPSOIL.

ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION UNTIL THE SITE HAS BEEN RE-VEGETATED. THE CONTRACTOR MAY REMOVE NECESSARY SILT FENCING TO CONSTRUCT ROADWAYS WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREAS.

SUFFICIENT TOPSOIL SHALL BE STOCKPILED TO ALLOW FOR THE REPLACEMENT OF A MINIMUM OF 6" OF TOPSOIL FOR DISTURBED AREAS TO BE RE-VEGETATED.

CONTRACTOR WILL SCHEDULE SITE GRADING, UTILITY INSTALLATION, AND GRAVEL SURFACE CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE-SEEDED SOON AFTER DISTURBANCE. DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS TYPICAL AND 7 DAYS FOR SLOPES 3:1 AND STEEPER OR WHEN IDENTIFIED AS IMPAIRED WATERS BY THE STATE.

SILT FENCES WILL BE CHECKED AFTER EACH RAIN EVENT AND DAILY DURING A PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING MEASURES AND REPORT IN LOG BOOK.

REMOVE SEDIMENT DEPOSITS FROM SILT FENCE AND BALE CHECKS WHEN SEDIMENT REACHES APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.

BARRIERS WILL BE REPLACED WHEN THEY DECOMPOSE OR BECOME INEFFECTIVE BEFORE THE BARRIERS ARE NO LONGER NECESSARY. ANY SEDIMENT REMAINING IN-PLACE AFTER THE BARRIERS ARE NO LONGER NECESSARY WILL BE DRESSED TO CONFORM TO EXISTING GRADE, AND PREPARED AND SEEDED WITH THE APPROPRIATE SEED MIX, AS DIRECTED BY THE ENGINEER.

IN THOSE AREAS WHERE WOOD FIBER BLANKET OR OTHER SOIL STABILIZATION METHODS HAVE FAILED, THE SLOPE SHALL BE REESTABLISHED, SEED AND TOPSOIL REPLACED, AND ADDITIONAL SLOPE TREATMENT INSTALLED AS DIRECTED BY THE ENGINEER.

BARRIERS WILL BE REMOVED WHEN FINAL STABILIZATION OF THE SLOPES HAS BEEN COMPLETED AS DETERMINED BY THE ENGINEER.

NO STORMWATER MITIGATION MEASURES WERE REQUIRED AS A PART OF ENVIRONMENTAL, ARCHAEOLOGICAL OR OTHER REQUIRED LOCAL, STATE, OR FEDERAL REVIEW OF THIS PROJECT.

THIS PROJECT IS NOT LOCATED IN A KARST AREA NECESSITATING MEASURES TO PROTECT DRINKING WATER SUPPLY.

EROSION PREVENTION PRACTICES

APPROPRIATE CONSTRUCTION PRACTICES WILL BE USED TO MINIMIZE EROSION. AREAS OF NON-DISTURBANCE WILL BE DELINEATED (FLAGGED, ETC.) ON THE SITE BEFORE WORK BEGINS.

CONTRACTOR SHALL PHASE CONSTRUCTION, MAINTAIN VEGETATIVE BUFFER STRIPS, AND PROVIDE HORIZONTAL SLOPE STAKING IN ORDER TO MINIMIZE EROSION.

DOWNSTREAM SILT FENCE AND INLET PROTECTION DEVICES WILL BE INSTALLED PRIOR TO EARTH MOVING ACTIVITIES.

SLOPES SHALL BE "CAT-TRACKED" WHEN COMPLETE SUCH THAT THE TRACK DEPRESSIONS ARE PERPENDICULAR TO DRAINAGE FLOW.

SILT FENCE SHALL BE INSTALLED BEFORE WORK BEGINS. SILT FENCE LIMITS SHALL COINCIDE WITH DOWNGRADE GRADING LIMITS UNLESS OTHERWISE NOTED.

SILT FENCE USED ON SLOPES SHALL BE PLACED SUCH THAT 100 LINEAL FEET OF SILT FENCE STABILIZES APPROXIMATELY 0.25 ACRES OF DRAINAGE.

THE WETTED PERIMETER OF DRAINAGE SWALES WILL BE STABILIZED WITH RAPID STABILIZATION MEASURES WITHIN 200' OF THE SITE BOUNDARY LINE.

PIPE OUTLETS WILL BE PROVIDED WITH ENERGY DISSIPATION (RIP RAP) WITHIN 24 HOURS OF CONNECTION TO WATERS OF THE STATE.

IF NOT SHOWN ON THE PLAN: ALL EXPOSED SOIL AREAS WITHIN 200' OF SURFACE WATER OR A STORMWATER CONVEYANCE WHICH HAVE CONTINUOUS POSITIVE SLOPES WILL HAVE TEMPORARY EROSION PROTECTION OR PERMANENT COVER FOR THE EXPOSED SOILS YEAR-ROUND, ACCORDING TO THE FOLLOWING TABLE OF SLOPES AND TIME FRAMES:

GRADE OF SLOPE	TIME (MAX.)	BMP
STEEPER THAN 3:1	7 DAYS	RAPID STABILIZATION METHOD 4
4:1 TO 3:1	14 DAYS	RAPID STABILIZATION METHOD 2
FLATTER THAN 4:1	14 DAYS	TYPE 1 DISC ANCHORED MULCH

THE CONTRACTOR SHALL CONSTRUCT CHECK DAMS ON THE PARKING SURFACE (SUBGRADE) DURING CONSTRUCTION IN ORDER TO CONTROL THE EROSION ON THE STREET AS WORK INCIDENTAL TO CONSTRUCTION. NO ADDITIONAL PAYMENT WILL BE MADE FOR SEDIMENT REMOVAL OR ADDITIONAL WORK OR MATERIALS REQUIRED TO MAINTAIN OR RESTORE THE SUBGRADE DUE TO EROSION.

CUT AREAS WHERE NO GRADING HAS OCCURRED WITHIN 7 DAYS WILL BE STABILIZED USING BIO-ROLLS A MINIMUM OF EVERY 20 LINEAL FEET IN ORDER TO PREVENT EROSION.

FILL SLOPES WHICH DRAIN TO WATERS OF THE STATE OR OFFSITE SHALL BE STABILIZED IMMEDIATELY UPON CESSATION OF GRADING ACTIVITIES. THUS, IF SLOPES ARE BROUGHT TO SUBGRADE ELEVATION AND WILL CEASE BEING WORKED ON UNTIL TOPSOIL RE-SPREADING, THEY WILL BE STABILIZED IN THE INTERIM. STABILIZE SLOPES WITH INTERIM LINES OF SILT FENCE OR BIO-ROLLS EVERY 20 LINEAL FEET.

SOIL STOCKPILES WHICH REMAIN UNWORKED FOR MORE THAN 7 DAYS WILL BE STABILIZED WITH SEED AND MULCH OR TARPS.

SEDIMENT CONTROL PRACTICES

CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN: SEDIMENT CONTROLS FOR TEMPORARY AND PERMANENT DRAINAGE BASINS AND DRAINAGE DITCHES THAT ARE A PART OF THIS DESIGN

CHECK DAMS AND/OR WOOD FIBER BLANKETS TO ENSURE SHEET FLOW AND PREVENT RILLS FOR SLOPE LENGTHS GREATER THAN 75' WITH A SLOPE OF 3:1 OR GREATER (SEE NOTES ON BIO-ROLLS SPACED EVERY 20' ABOVE)

SILT FENCE AT ALL DOWN GRADIENT PERIMETERS INSTALLED PRIOR TO ALL LAND DISTURBING ACTIVITIES

INLET PROTECTION AT ALL DRAIN INLETS INCLUDING NEWLY CONSTRUCTED CATCH BASINS, INCLUDING CATCH BASIN STRUCTURES PRIOR TO CASTING INSTALLATION, AND SANITARY SEWER STRUCTURES.

SILT FENCING AROUND TEMPORARY SOIL STOCKPILES

ROCK OR WOOD CHIP CONSTRUCTION SITE ENTRANCES

STREET SWEEPING OF TRACKED SEDIMENT ONTO PAVED SURFACES

CONCRETE TRUCKS SHALL PERFORM WASHOUT ACTIVITIES OFFSITE

DEWATERING AND BASIN DRAINING

CONTRACTOR SHALL PROVIDE PERMITS FOR ALL DEWATERING ACTIVITIES (INCIDENTAL TO CONSTRUCTION) ALL DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY SEDIMENTATION BASIN OR DEWATERING BASIN CONSTRUCTED NEAR THE OUTLET OF THE PERMANENT BASIN.

THE DEWATERING OR TEMPORARY SEDIMENT BASINS WILL BE PUMPED THROUGH A FILTRATION SYSTEM CONSTRUCTED BY THE CONTRACTOR PRIOR TO DISCHARGE THROUGH POND OUTLET.

DEWATERING CHANNELS WHICH ARE OVER LAND SHALL BE PROTECTED FROM EROSION. PLACE END OF HOSE ON FABRIC OR PLASTIC TO PREVENT EROSION.

CLEAN OUT TEMPORARY SEDIMENT BASINS TO DESIGN VOLUME AFTER EACH 1" CUMULATIVE RAINFALL EVENT(S). DESIGN VOLUME IS TYPICALLY 3600 CUBIC- FEET, U.O.N.

CONSTRUCT DEWATERING ACTIVITIES SUCH THAT THEY WILL NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR ON DOWN SLOPE PROPERTIES OR ADVERSELY AFFECT WETLANDS.

ADDITIONAL BMP'S FOR SPECIAL WATERS

THIS PROJECT DOES NOT DISCHARGE TO SPECIAL WATERS OR HAVE SIGNIFICANT IMPACTS TO WETLANDS

INSPECTIONS AND MAINTENANCE

CONTRACTOR SHALL INSPECT AND MAINTAIN MEASURES AT MINIMUM ONCE EVERY (7) DAYS DURING ACTIVE CONSTRUCTION, AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5" IN 24 HOURS.

INSPECTIONS WILL INCLUDE STABILIZED AREAS, EROSION PREVENTION AND SEDIMENT CONTROLS, THE ROADWAY DITCH, AND THE ROADWAY ITSELF.

STABILIZED AREAS WILL BE INSPECTED ONCE PER MONTH. WHERE WORK HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, INSPECTIONS AND MAINTENANCE WILL TAKE PLACE AS SOON AS FIRST RUNOFF OCCURS AT THE SITE OR PRIOR TO RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.

CONSTRUCTION SITE VEHICLE ENTRANCES WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT BEING TRACKED ONTO PAVED SURFACES DAILY. TRACKED SEDIMENT MUST BE REMOVED FROM ALL OFF-SITE PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

REFER TO MPCA'S COMPLIANCE GUIDE FOR EROSION AND SEDIMENT CONTROL FOR INSPECTION LOG REQUIREMENTS.

RECORDS RETENTION

CONTRACTOR SHALL MAINTAIN RECORDS OF THE SEDIMENT RETENTION PROCEDURES ON-SITE. RECORDS WILL INCLUDE: COPY OF THE SWPPP AND ANY CHANGES, INSPECTION AND MAINTENANCE RECORDS, PERMANENT OPERATION AND MAINTENANCE AGREEMENTS CALCULATIONS FOR THE DESIGN OF TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS

POLLUTION PREVENTION MANAGEMENT MEASURES

SOLID WASTE: COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.

CONCRETE AND OTHER WASHOUTS: PERFORM ALL CONCRETE TRUCK WASHOUTS OFFSITE.

SOILD AND LIQUID WASHOUT WASTE FROM OTHER MATERIALS (STUCCO, PAINT, FORM RELEASE OILS CURING COMPOUNDS ETC.) WILL BE DISPOSED OF IN A PROPERLY DESIGNATED LANDFILL.

PERFORM ALL WASHOUTS INCLUDING HANDTOOLS IN A LEAKPROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. DEBRIS/SEDIMENT WILL NOT CONTACT THE GROUND SURFACE.

A SIGNED REQUIRING USE OF PROPER WASHOUT FACILITIES WILL BE INSTALLED ADJACENT TO SAID FACILITIES.

HAZARDOUS MATERIALS: OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE THE MPCA REGULATIONS.

EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF MUST BE CONTAINED OF AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.

SWPPP IMPLEMENTATION CHAIN OF RESPONSIBILITY

THE GENERAL CONTRACTOR SHALL PROVIDE A TRAINED, CERTIFIED, KNOWLEDGEABLE PERSON WHO SHALL SERVE AS THE SITE'S EROSION CONTROL INSPECTOR. THIS PERSON SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMP'S, AND SHALL MAINTAIN THE INSPECTION LOG AT THE PROJECT SITE.

EACH SUBCONTRACTOR ON-SITE WILL DESIGNATE AN EMPLOYEE AS ITS PROJECT SWPPP OFFICER. A LIST OF THESE OFFICERS WITH CONTACT INFORMATION WILL BE AVAILABLE ON-SITE. IT WILL BE SOLELY THE SWPPP OFFICERS' RESPONSIBILITY TO ENSURE THAT ALL ON-SITE ACTIVITIES PERFORMED BY ITS COMPANY COMPLY WITH THE SWPPP. THE GENERAL CONTRACTOR'S SWPPP INSPECTOR WILL HAVE AUTHORITY OVER ALL SUBCONTRACTOR'S SWPPP OFFICERS FOR WORK PERTAINING TO COMPLIANCE.

SHOULD A SWPPP OFFICER FAIL TO ENSURE COMPLIANCE, THAT OFFICER'S FOREMAN OR DIRECT SUPERVISOR WILL ASSUME ALL RESPONSIBILITY.

SHOULD A SUBCONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE GENERAL CONTRACTOR WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

SHOULD THE GENERAL CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE OWNER WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

CHANGES IN PERMIT AND NOTICE OF TERMINATION

THE CONTRACTOR WILL BE A CO-PERMITTEE DURING THE CONSTRUCTION OF THE PROJECT. AFTER BITUMINOUS SURFACING OF THE PROJECT HAS BEEN COMPLETED, AND 70% PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED OVER THE PERVIOUS AREAS OF THE SITE, AND THE WARRANTY PERIOD HAS ELAPSED, THE CONTRACTOR MAY SUBMIT A MPCA (NOT) FORM TO THE OWNER FOR SIGNATURE AND SUBMITTAL TO THE MPCA.

THE OWNER WILL SUBMIT THE NOTICE OF TERMINATION (NOT) AFTER ONE FINAL ESTABLISHMENT OF ALL PERVIOUS SURFACES ACCORDING TO THE MPCA GENERAL PERMIT REQUIREMENTS

NOTIFICATION OF THE MPCA IN CASE OF POLLUTION

IT IS THE DUTY OF THE CONTRACTOR TO NOTIFY THE MPCA IMMEDIATELY OF ANY DISCHARGE, ACCIDENTAL OR OTHERWISE, OF ANY SUBSTANCE OR MATERIAL UNDER HIS CONTROL WHICH, IF NOT RECOVERED, MAY CAUSE POLLUTION OF WATERS OF THE STATE, AND THE CONTRACTOR SHALL RECOVER AS RAPIDLY AND THOROUGHLY AS POSSIBLE SUCH SUBSTANCE OR MATERIAL AND TAKE IMMEDIATELY SUCH OTHER ACTION AS MAY BE REASONABLY POSSIBLE TO MINIMIZE OR ABATE POLLUTION OF WATERS OF THE STATE CAUSED THEREBY.

SEDIMENT LEAVING THE CONSTRUCTION SITE AND ENTERING A PUBLIC WATER IS CAUSE FOR NOTIFICATION.

MPCA DUTY OFFICER: 800-422-0798

WINTER STABILIZATION

IN THE EVENT THAT FINAL STABILIZATION OF THE SITE HAS NOT OCCURRED PRIOR TO WINTER CONDITIONS, THE FOLLOWING ACTIVITIES WILL OCCUR:

1. STABILIZE ALL AREAS DESIGNATED TO RECEIVE TURF WITH SEED MIX 22-112 @ 40 LB/ACRE WITH SEED MIX 21-112 (WINTER WHEAT) @ 100 LB/ACRE, AND TYPE 1 MULCH FROZEN TO GROUND WITH WATER
2. SPOT CHECK AND STABILIZE ALL AREAS ALREADY STABILIZED WITH THE ABOVE
3. PERFORM MONTHLY INSPECTIONS TO EVALUATE ON-GOING EFFECTIVENESS OF INSTALLED MEASURES
4. AT SPRING THAW, SPOT CHECK AND STABILIZE ALL AREAS PER THE METHOD IN NO. 1 ABOVE, INSPECT ALL ESC BMP'S AND REPLACE OR REPAIR AS NEEDED, RESUME TYPICAL MAINTENANCE SCHEDULE

QUALIFIED SWPPP PERSONNEL INFORMATION

SWPPP DESIGNER: JOHN H. SCHULTE V, PE
 JONES HAUGH & SMITH, INC.
 515 SOUTH WASHINGTON AVE
 ALBERT LEA, MN 56007
 (507) 451-4598

SWPPP INSTALLER:
 NAME: _____
 FIRM: _____
 ADDRESS: _____
 PHONE: _____
 SWPPP INSPECTOR:
 NAME: _____
 FIRM: _____
 ADDRESS: _____
 PHONE: _____

GRADING CONTRACTOR:
 NAME: _____
 FIRM: _____
 ADDRESS: _____
 PHONE: _____

OTHER LAND DISTURBING CONTRACTOR:
 NAME: _____
 FIRM: _____
 ADDRESS: _____
 PHONE: _____

OTHER LAND DISTURBING CONTRACTOR:
 NAME: _____
 FIRM: _____
 ADDRESS: _____
 PHONE: _____

REV.	BY	DATE
-	-	-



415 West North Street Owatonna, MN 507-451-4598

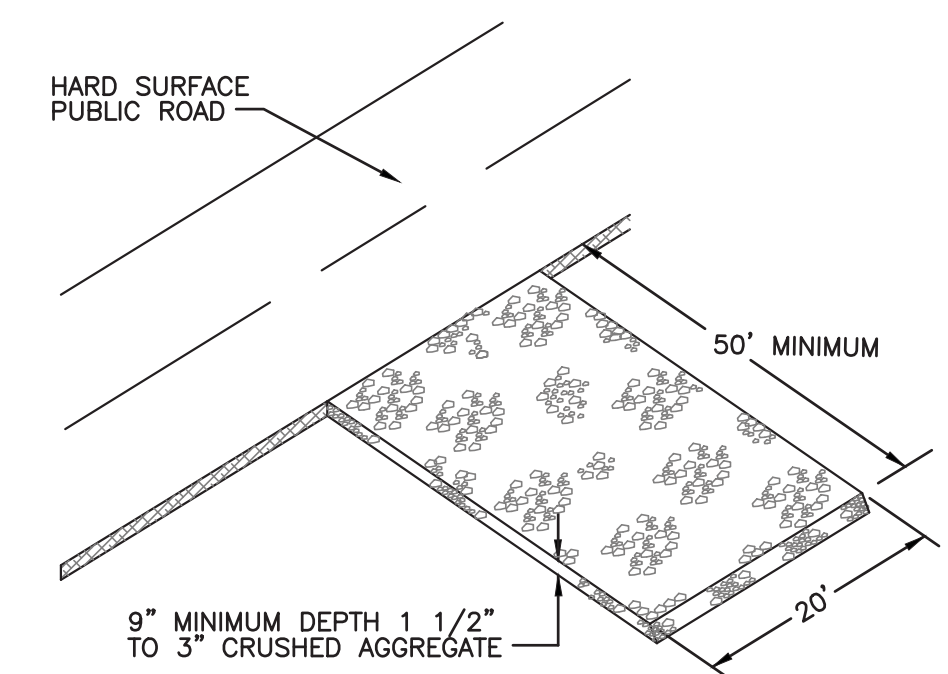
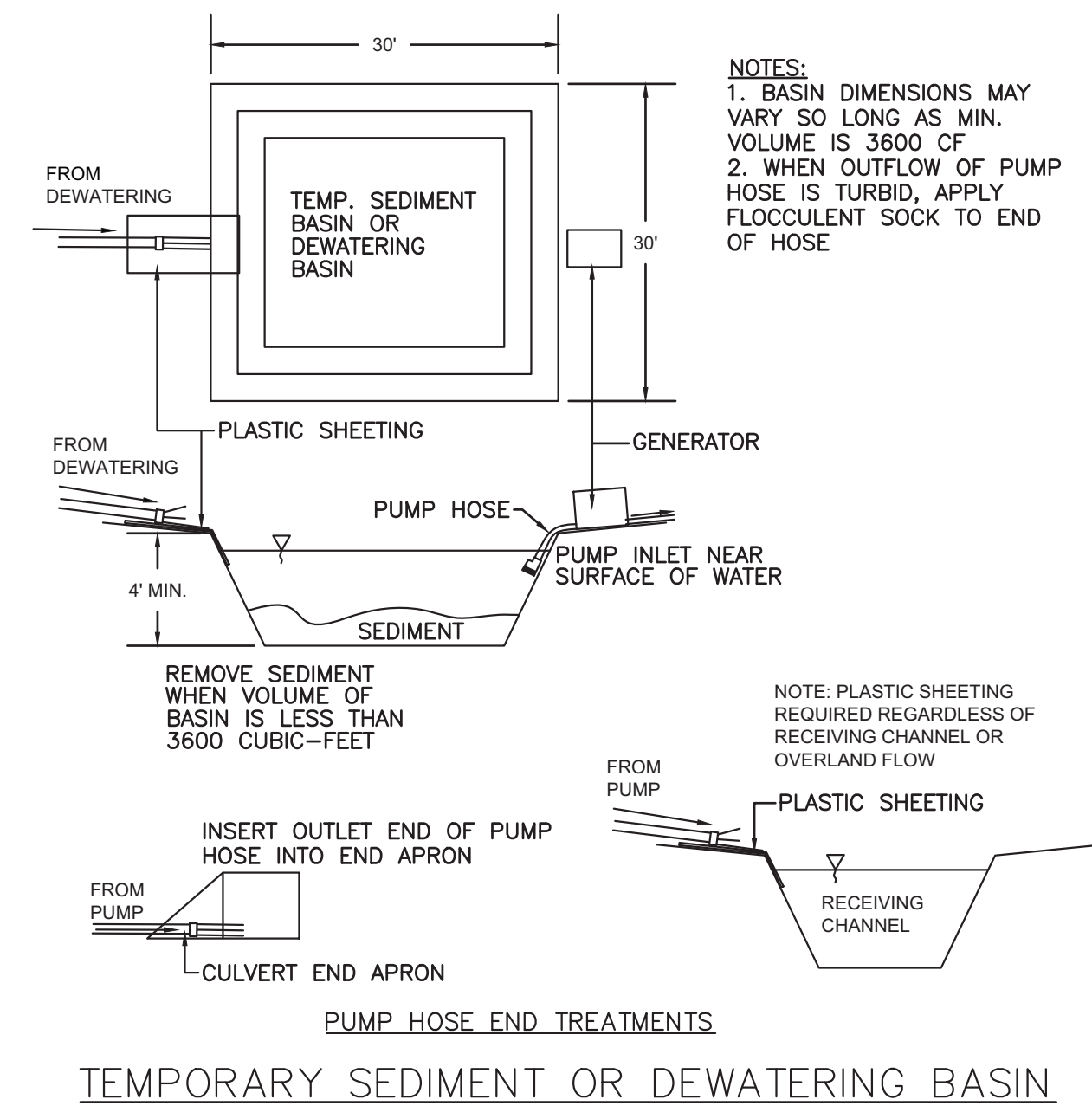
DESIGNED: JHS5
 DRAWN: JHS5
 CHECKED: BJJ
 Date: JULY 2017
 DWG: 17-211DESIGN

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

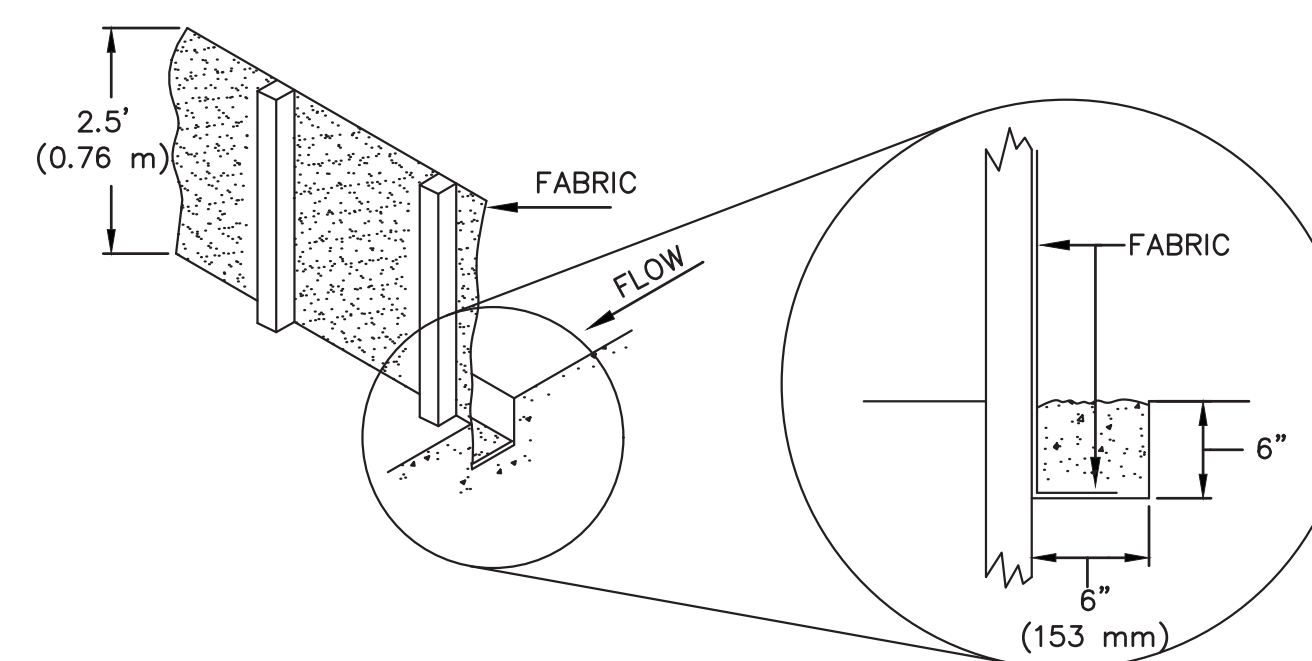
 John H. Schulte V
 License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
 THREE RIVERS COMMUNITY ACTION
 2017-2018 CONSTRUCTION
 SWPPP NOTES

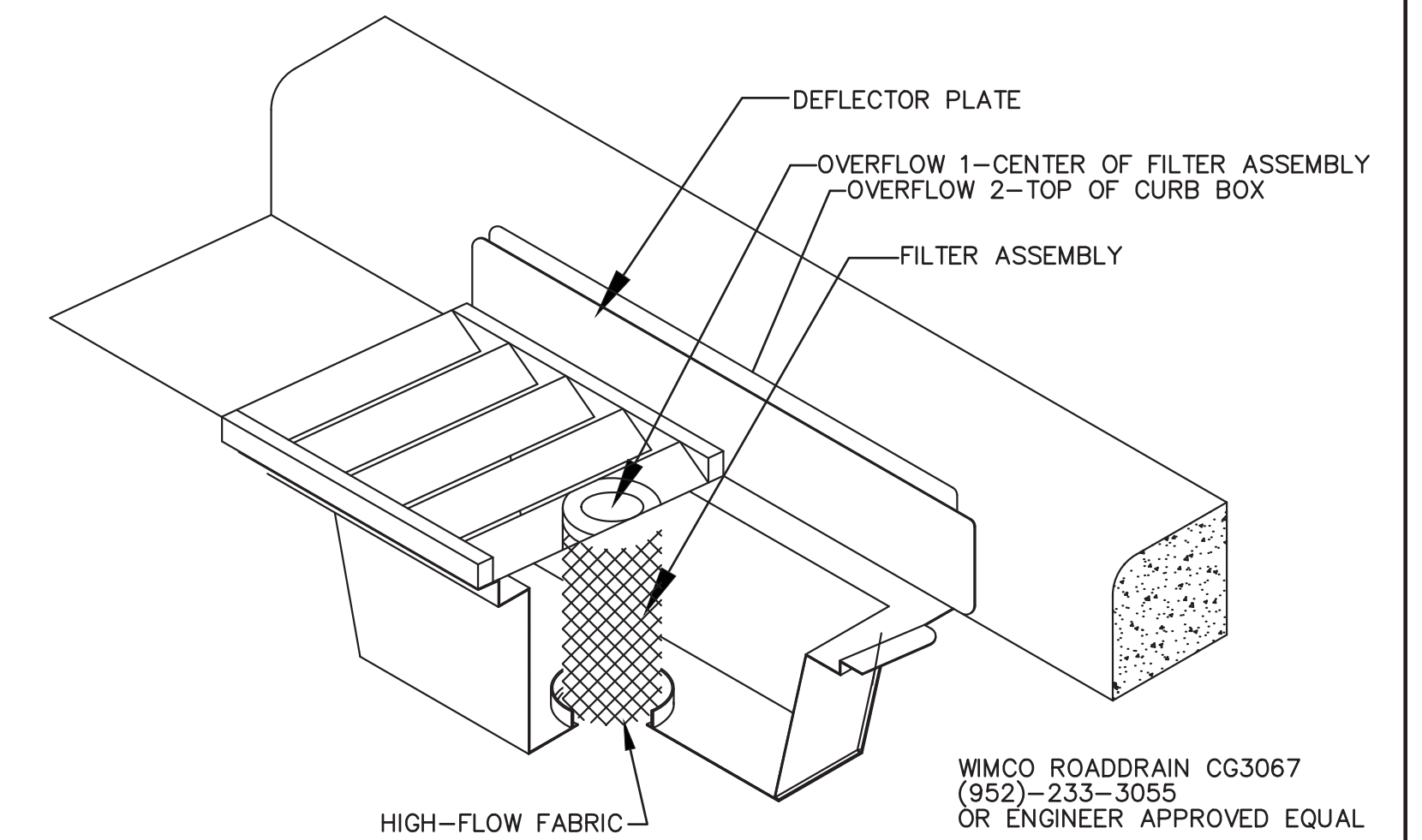
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EROSION CONTROL PROTECTION AT CONSTRUCTION ACCESS



EROSION CONTROL FENCE (MACHINE SLICED)



CATCH BASIN INLET PROTECTION

NOT TO SCALE

REV.	BY	DATE



415 West North Street Owatonna, MN 56045-4598

DESIGNED: JHS
DRAWN: JHS
CHECKED: BAJ
Date: JULY 2017
DWG: 17-210ESIGW

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional-Engineer under the laws of the State of Minnesota.

John H. Schulte V
 John H. Schulte V
 License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
SWPPP NOTES

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SPECIFICATIONS

GOVERNING SPECIFICATIONS

The Minnesota Department of Transportation's "Standard Specifications for Construction" 2016 Edition, including the Mn/DOT Special Provisions modified for this project, Minnesota Plumbing Code, Austin Utilities Standard Plans, Details, and Specifications, and the City Engineers Association of Minnesota Standard Specification, 1999 Edition, will govern except as modified or altered in the Special Provisions. All references to "State of Minnesota" or "Commissioner of Transportation" or "Department" are hereby revised to mean "Owner."

WORK WITHIN PROPERTY

The Contractor will work only in areas secured by the Owner, and will comply with all requirements of access agreements.

MATERIALS TESTING

The following materials tests will be provided by the Contractor:

Work to be Tested	Method	Reference Spec.	Testing Rate
Sewer & Water Service Trenches	Specified Density	MnDOT 2105, 2451, 2501	1 tests each
Subgrade Compaction	Specified Density	MnDOT 2105	1 test per major soil (Clay, Sand, etc.)
Test Rolling	Fully Loaded Dump Truck		1 test per major area completed
Select Granular Borrow	Specified Density	MnDOT 3149	1 per 5000 ton
	Gradation	MnDOT 3149	1 per Source
Aggregate Base (CL 2, CL 5)	Modified DCP	MnDOT 2211	2 tests per 1000 ton
	Gradation	MnDOT 2211	1 per 5000 ton
Bituminous Paving	Ordinary Comp.-Control Strip	MnDOT 2360	1 control strip per mobilization and/or per workday
Concrete Curb & Gutter	Air, Slump, Temp, Strength	MnDOT 2461	
	Air, Temp, - 1 per day		
	Slump, Strength - 1 per day; and each time water is added at the site		
Concrete Driveway or Sidewalk	Air, Slump, Temp, Strength	MnDOT 2461	
	Air, Temp, - 1 per day		
	Slump, Strength - 1 per day; and each time water is added at the site		
Concrete Paving		MnDOT 2301	
	All Concrete Field testing or Concrete Pavement per 2012 MnDOT Schedule of Materials Control (page 32), except Pavement Texture and Smoothness.		

Table Notes:

- Specified Density also requires Moisture-Density and Relative Density
- The Engineer may omit duplicative trench compaction tests at his discretion

Unless required by the above, no concrete or bituminous plant testing is required.

MAINTENANCE OF TRAFFIC (1404)

The Contractor will be responsible for traffic control on the Project, and will furnish, erect, and maintain all necessary traffic control devices required to provide safe movement of vehicular traffic through the Project. Any traffic control device installed will meet the requirements of the Minnesota Manual on Uniform Traffic Control Devices, Field Manual, latest edition, and the latest MnDOT specifications approved at the time of bid.

The Contractor will prepare and submit to the City Engineer and County Engineer for Approval a Traffic Control Plan for any work in or utilization of traveled Right-of-Way. The plan will be submitted a minimum of 48 hours prior to the commencement of work. No work in the Right-of-Way will commence without an Approved Traffic Control Plan.

Traffic control will be in accordance with the Traffic Control Layout Plan and the following:

Traffic control devices include, but are not limited to, barricades, warning signs, lane markings, trailers, flashers, cones, and drums, as required, and sufficient barricade weights to maintain barricade stability. No material will be deposited on a traveled roadway.

Materials will not be placed on road right of way more than one week in advance of their use.

Contractor will notify the affected parties at least one week prior to commencement of disturbance of the private or business drives.

Coordination will be maintained with the Fire and Police Departments to ensure that passage is maintained for emergency vehicles at all times.

The Contractor will make one person responsible for the maintenance of all signs. The Contractor will check each intersection at the end of each day whether it is a working day or not. The name and telephone number of this person will be left with the Police, the City Engineer, and the Fire Departments.

UTILITY PROPERTY AND SERVICE (1507)

Construction operations in the proximity of utility properties will be performed in accordance with the Provisions of 1507, except as modified below:

The first paragraph of 1507 is deleted and the following substituted therefore:

It will be the Contractor's responsibility to contact all local utility companies and ascertain the location of all existing underground utilities, if any, prior to performing any excavation operations. The Contractor will conduct his/her operations in the vicinity of any such facilities, which may exist, in a manner that will prevent damage thereto.

It will be the Contractor's responsibility to utilize the One-Call Excavation Notice System at 'Gopher State One Call' (1-800-252-1166) required under Minnesota Statute Chapter 216D, 48 hours prior to performing any excavation adjacent to any underground facility, which may exist, in a manner that will prevent damage thereto.

CONSTRUCTION STAKES, LINES AND GRADES (1508)

All construction staking will be provided by the Contractor and performed by or under the direct supervision of a Land Surveyor licensed in the State of Minnesota.

Field Fit Adjustments to Grade Stakes

The Engineer may make minor adjustments (< 0.5") to the grade stakes after they have been placed, in order to adjust to actual conditions in the field or to ensure proper or better drainage. Any adjustments to proposed or in-place materials required due to minor adjustments made by the Engineer are incidental to the work.

CONTROL OF HAUL ROADS (1515), LAWS TO BE OBSERVED (1701)

In addition to the requirements of 1515 and 1701, the Contractor will abide by all weight restrictions implemented by the governing road authorities in the performance of the work and in delivering materials and equipment to the project site.

AIR LAND AND WATER POLLUTION (1717)

The provisions of Mn/DOT 1717 are hereby modified and supplemented as follows:

Extreme Events

The determination of "extreme" weather events will be solely at the discretion of the Engineer. Unless the Engineer determines that an "extreme" event has occurred, no additional compensation will be remitted for ESC work due to precipitation events.

The Contractor may request the Engineer determine an "extreme" event if:

- 4" or more of precipitation falls in less than 24 hours or
- Precipitation falls steadily for longer than 4 days

These conditions do not themselves determine an "extreme" event, the Engineer will determine if an "extreme" event has occurred.

No extension of contract time will be granted due to "extreme" events.

DEWATERING

Any dewatering necessary to construct the work will be done by the Contractor. The Contractor is responsible to determine the type and method of dewatering and to provide and implement all equipment and materials necessary to accomplish the work on this project. Discharged water from dewatering will be routed through a temporary sediment basin. Sediment trapped in the temporary basins will be removed and disposed of on-site.

PROTECTION OF SURFACE STRUCTURES

The Contractor will not trespass on any private property without the express written consent of the Owner thereof. Trees, shrubs, fences, poles and all other private property will be protected unless their removal is authorized. Any property damaged will be satisfactorily restored at the expense of the Contractor. Any land survey or property monuments destroyed, covered, moved, bent or disturbed will be replaced by a Licensed Land Surveyor at the expense of the Contractor.

Wherever construction is planned to cross private property, an easement for the construction has been acquired from the property owner. The Contractor will familiarize himself with the terms of such easements, which the Owner will have on file.

Ground surface, trees, shrubbery, fences and other private property will be restored to the same condition as existed prior to the beginning of construction. This will include consolidating backfill, graveling driveways and any other leveling and landscaping required to restore the premises to original condition. The topsoil will be piled separately from subsoil material and will be replaced in the trench above the subsoil material.

Except where sodding is required, all grassed areas disturbed during the construction will be seeded following landscaping.

The Contractor will restore at his own expense streets, roads, alleys, private or public structures such as water mains, water connections and appurtenances, culverts, drain tiles, sewers, manholes, catch basins, sewer connections, curb, gutter, sidewalk, street signs, or other structures designated to remain in place which are damaged or injured in any way by his acts, and will be responsible for all damages to other utilities he may encounter.

The Contractor will not claim, or be entitled to receive, compensation for any damages sustained by reason of the inaccuracy or omission of any of the information given on the drawings relative to surface, overhead, or underground structures, or by reason of his failure to properly protect such structures.

PROTECTION OF SIDE STREETS AND HAUL ROUTES

The Contractor will be responsible for any damage of the side streets in the area and any other streets that are used as haul routes. The Contractor will discuss all haul route possibilities with the City Engineer and County Engineer prior to their use. The City Engineer, County Engineer, and the Contractor together will inspect the condition of the proposed routes before, during and after their use. The Contractor will correct any damage that is caused by the hauling activities at no cost to the Owner.

INTERFERENCE OF UNDERGROUND STRUCTURES

Existing utilities crossed by the new construction will be protected against damage, and/or replaced to original grade. Protection, temporary support and maintenance of existing utilities will be furnished by the Contractor at his own expense. The final installation will provide permanent support to prevent any settlement or movement, which may result in damage to these utilities.

Whenever existing pipe is replaced, the material of replacement will be DIP or PVC pipe of the same diameter as the original, long enough to extend at least one foot into the solid bank on either side of the excavation. The backfill under and around such pipe will be thoroughly compacted by mechanical means to preclude settlement. All connections between different types or sizes of pipe or improperly matched joint types will be encased in concrete with a minimum thickness of 6 inches.

Should it become necessary during the progress of the work to remove or relocate existing utilities or structures, the Owner will cause the same to be done at no expense to the Contractor, except as otherwise provided herein. The Contractor will notify those who maintain utilities sufficiently in advance of construction so they may make the necessary location, disclosure, relocation or other preparation. Where necessary to locate existing underground utilities, the Contractor, upon order of the Engineer, will make any required subsurface explorations and excavation, and will be allowed compensation therefore. Where relocation or reconstruction of existing utilities is impracticable, a change in line and/or grade of the new construction will be ordered, and the change will be made as directed. No deviation from the line or grade set by the Engineer will be made without his approval.

CONNECT TO EXISTING SANITARY SEWER

The Contractor will connect to the existing sanitary sewer at the locations shown on the plan. Exploratory excavation for determining the location of existing utilities and the connection to the existing sanitary sewer are incidental to the work. The Contractor will verify the connection elevation at the main is reasonably close to the elevation shown on the plan prior to beginning work. If the elevation is substantially different, the Contractor will notify the Owner and Engineer.

Where new connections are made to existing sanitary sewer manholes, the contractor will core drill the manhole wall and invert to the existing flow line, construct and shape a new invert for the new pipe, and provide a waterproof boot through the wall of the manhole for the new pipe.

SANITARY SEWER CONSTRUCTION REQUIREMENTS

- Noise -- The Contractor will insure all equipment is properly fitted with mufflers to reduce noise to the minimum attainable to avoid creating a nuisance in the residential and business area.
- Trench Compaction -- All trenches will be tamped using the existing material that has been excavated. Tamping will not be paid as a bid item, therefore the cost of this work will be included in the price bid for furnishing and installing the pipe.
- Piling Excavated Materials -- Excavated material will not be piled on private property without the express permission of the owner thereof, except where easements for the sewer construction or for related work have been obtained; nor will it be piled in any location that will require backfilling machinery to operate on private property. Where excavated material is piled on private property it will be placed to cause the least possible inconvenience to the property owner. Any damage caused thereby, including damage to buildings, walls, sidewalks, driveways, trees, shrubs, lawns, or any other property, will be repaired at the expense of the Contractor. Backcasting in order to minimize disturbance is incidental to the work.
- It will be the Contractor's responsibility to protect adjacent pipes in and around manholes to be reconstructed, and will replace any pipes damaged, cracked, or broken by the Contractor at their expense.
- All excavations, trenching and/or jacking and boring pits will be sheeted and/or shored as per OSHA requirements. No unsheeted trench will be left open overnight.
- Sanitary Sewer Televised Inspection - In addition to the air test and the sphere test to be completed by the Contactor, the Contractor will televise all sanitary mainline sewers that are installed. Any defects found by this inspection will be the Contractors responsibility to correct.
- Backfilling of all trenches within the limits of street excavation will comply with the provisions of MN/DOT Specification 2112 including achieving 100% compacted density in the upper three feet of subgrade (below aggregate base) and 95% below the upper three feet. Density testing will be performed as directed by the Owner to verify compaction. Trench areas that are determined by the Owner to have yielded due to improper compaction will be deemed as Unacceptable Work and will be corrected by the contractor at no additional cost.
- Removal of former service lines. -- Service lines no longer being utilized will be removed to the main, as directed by the City. Removal and restoration of street surfacing required for the service removal is incidental.
- RECORDS OF LATERALS: The Contractor will maintain a complete and accurate record of the location and depth of each lateral. The Contractor will make measurements from the end of each service to prominent permanent features to facilitate its location in the future. The end of each lateral will be located in plan and elevation, and a sketch made to show the plan location. These records will be turned over to the Owner.
- All plumbing shall be installed in accordance with the Minnesota Plumbing Code (see Minnesota Rules, part 4715.0320).
- The installation will comply with ASTM D2321, which requires installation by open trench on a continuous granular bed (see Minnesota Rules, part 4715.0530).
- PVC solvent weld joints will include a primer of contrasting color to the pipe and cement (see Minnesota Rules, part 4715.0810, subpart 2).
- A sanitary sewer cleanout will be provided near the connection between the building drain and the building sewer (see Minnesota Rules, part 4715.1000).
- All portions of the storm sewer system located within 10 feet of the building or water service line must be tested in accordance with Minnesota Rules, part 4715.2820.

MATERIALS FOR SANITARY SEWER CONSTRUCTION

- The project calls for the use of Poly-Vinyl Chloride (PVC). Pipe and fittings should be properly bedded and encased in accordance with the Standard Detail Sheet and Standard Specifications for Sanitary Sewer Installation.
- Bedding and encasement beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. Foundation rock is incidental to pipe installation.
- PVC sanitary sewers will meet one of the following ASTM Standards: D3034, F789, D2665, or F891. ASTM D2241 pipe may be used for sewers 6 inch and larger.
- Joints for PVC-SDR 35, and PVC-SDR 26 gravity sewer pipe will be made using Elastomeric gaskets conforming to the requirements of ASTM D3212.
- Joints in precast concrete manholes will be made using a joint compound equal to Ram-Nek or rubber gasketed conforming to ASTM C443.
- All manhole castings will be equipped with solid lid covers, self-sealing, with concealed pick holes. Manhole casting will be Neenah R1772, or equal and will be labeled 'SANITARY' on casting.

CONNECT TO EXISTING WATERMAIN

The Contractor will connect to existing watermain at the locations shown on the plan. All connections to existing water main are incidental to the work. All exploratory excavation in determining the location of existing water main is incidental to the work. The Contractor will coordinate with the City and be responsible for any fees due for connections.

WATERMAIN CONSTRUCTION REQUIREMENTS (NOTE MAINS BY AU, SERVICES BY CONTRACTOR)

- Noise -- The Contractor will insure all equipment is properly fitted with mufflers to reduce noise to the minimum attainable to avoid creating a nuisance in the residential and business area.
- Bedding and encasement beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. Foundation rock will be paid at the unit price per ton. No payment will be made for bedding materials which, in the opinion of the Engineer, was unnecessary for proper pipe installation.
- Trench Compaction -- All trenches will be tamped using the existing material that has been excavated. Tamping will not be paid as a bid item, therefore the cost of this work will be included in the price bid for furnishing and installing the pipe.
- Piling Excavated Materials -- Excavated material will not be piled on private property without the express permission of the owner thereof, except where easements for the sewer construction or for related work have been obtained; nor will it be piled in any location that will require backfilling machinery to operate on private property. Where excavated material is piled on private property it will be placed to cause the least possible inconvenience to the property owner. Any damage caused thereby, including damage to buildings, walls, sidewalks, driveways, trees, shrubs, lawns, or any other property, will be repaired at the expense of the Contractor.
- It will be the Contractor's responsibility to protect adjacent pipes in and around manholes to be reconstructed, and will replace any pipes damaged, cracked, or broken by the Contractor at their expense.
- All excavations, trenching and/or jacking and boring pits will be sheeted and/or shored as per OSHA requirements. No unsheeted trench will be left open overnight.
- Backfilling of all trenches within the limits of street excavation will comply with the provisions of MN/DOT Specification 2112 including achieving 100% compacted density in the upper three feet of subgrade (below aggregate base) and 95% below the upper three feet. Density testing will be performed as directed by the Engineer to verify compaction. Payment will be made at the unit price for tests which pass the specified compaction. No payment will be made for tests which fail to meet the specified density. Trench areas that are determined by the Engineer to have yielded due to improper compaction will be deemed as Unacceptable Work and will be corrected by the contractor at no additional cost.
- The Contractor will coordinate the construction of all private and municipal utilities.
- The Contractor will be responsible for all tapping or other fees paid to public or private utilities as work incidental to the contract.
- RECORDS OF LATERALS: The Contractor will maintain a complete and accurate record of the location and depth of each water lateral. The Contractor will make measurements from the end of each service to prominent features to facilitate its location in the future. The end of each lateral will be located in plan and elevation, and a sketch made to show the plan location. These records will be turned over to the Owner.
- The bottom of the water service pipe located within ten feet of the sewer crossing must be at least 12 inches above the top of the sewer. When this is not feasible, the sewer pipe must be constructed of materials listed in Minnesota Rules, part 4715.1710, subpart2, E. The water service should not contain any joints or connections within 10 feet of the crossing.
- Water services will be installed per ASTM D2774 (see Minnesota Rules, part4715.0510). Joints must use approved insert fittings with metal clamps. No more than two feet may be exposed within the building.

MATERIALS FOR WATERMAIN CONSTRUCTION

- Pipe and fittings should be properly bedded and encased in accordance with manufacturer's requirements. Foundation rock will be used in poor soil conditions.
- Bedding and encasement for pipe, beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. Foundation rock will be paid at the unit price per ton.
- All joints between pipe, fittings, valves, and hydrants will be equipped to provide electrical conductivity.
- Gaskets will be mechanical joint rubber gaskets, unless otherwise specified.
- The furnishing and installing of disinfection materials to disinfect the watermains will be the responsibility of the Contractor. The City Utilities Department will assist the Contractor in flushing and testing the watermains.
- The Contractor will use restrained joint mechanical joint flanges with mega lug retainer glands or equal on all watermain offsets, bends, or other mechanical fittings. COR-BLUE-T-BOLTS will be required on all mechanical joints and sleeves.
- All exposed parts of the bolts and nuts will be completely coated with an approved asphaltic type rust preventive material. Any parts of the fittings that have been scraped will also be coated with an approved asphaltic type rust preventive material. Watermain fittings will conform to ANSI Standard A21.10. All watermain fittings, hydrants and retaining rods will be protected by using sacrificial zinc anode caps such as 175P190 Protecto Caps as manufactured by Ebba Iron or an approved equal. Two caps per mechanical joint will be used.
- Polyethylene (PE) water services must meet ASTM D2239 or D2737.

REV.	BY	DATE
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415 West North Street Owatonna, MN 507-451-4598

DESIGNED: JHS
DRAWN: JHS
CHECKED: BAJ
Date: JULY 2017
DWG: 17-210ESGV

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

John H. Schulte V
License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
SPECIFICATIONS

SHEET
4
OF
15

SPECIFICATIONS

TESTING OF WATER MAIN

Hydrostatic pressure testing of water main and services will be conducted as follows:

After the pipe has been laid, including fittings and valves and blocking, all newly laid pipe or any valved section thereof, unless directed otherwise by the Engineer, will be subject to hydrostatic pressure of 150 pounds per square inch. The duration of each such test will be at least two hours.

Each section of pipe to be tested will be filled with water and all air expelled at the highest point. The required taps to expel air or to fill the water main will be supplied and installed by the Contractor and will be 3/4 inch and will include an approved service saddle when required.

The test apparatus will be applied at the lowest elevation on the section to be tested. The apparatus will be connected to the main at a service tap or special tap location.

The pressure gauge will be a standard pressure gauge. The dial will register from 0 - 200 psi and have a dial size of 4 1/2 inches with 1-psi increments.

The hydrostatic test, pressure requirement for an acceptable test will be a maximum pressure drop of 2 psi during the last hour of the two-hour pressure test. If this test requirement cannot be met, the Contractor will investigate the cause, make corrections, and retest until the pressure drop requirement can be met.

Only if several consecutive tests indicate a consistent pressure drop and only after the Contractor has made numerous attempts to resolve the problem, acceptable to the Engineer, may the Contractor request in writing and the Engineer consider the use of the leakage test. The leakage test may be performed by the Contractor to determine the magnitude of the leak, however, meeting the leakage allowance will not automatically be considered acceptance, in lieu of the pressure test, for the section being tested. Final acceptance will be at the discretion of the Engineer.

When allowed, the leakage test will be performed in accordance with AWWA C-600, Section 4.1.5, 4.1.6 and the line will be accepted as per Section 4.1.7.

Operational Testing will be conducted as follows:

At the completion of the project and in the presence of the Engineer and the Contractor, representatives of the Owner will operate all valves, hydrants, and water services to ascertain that the entire facility is in good working order; that all valve boxes are centered and valves are opened; that all hydrants operate and drain properly; that all curb boxes are plumb and centered; and that water is available at all curb stops.

Disinfection Testing:

The water distribution system shall be disinfected per Minnesota Rules, part 4715.2250.

Before being placed in service, the completed water main will be disinfected. Disinfection materials and procedures, and the collection and testing of water samples, will be in accordance with the provisions of AWWA C-651. After the final flushing the water will be tested for bacteriologic quality and found to meet the standards prescribed by the Minnesota Department of Health.

Samples will be taken and tested after 24 and 48 hours of disinfection. Both tests must be returned with passing results prior to approval for service.

Where an existing water main is cut for the installation of any fitting, the pipe and fittings proposed to be installed will be disinfected prior to installation as follows:

The interior of the pipe and fittings will be cleaned of all dirt and foreign material.

The interior of the pipe and fittings will be thoroughly swabbed or sprayed with a 1 percent minimum hypochlorite solution.

Unless otherwise indicated in the Plans, Specifications, and Special Provisions, the Contractor will furnish all materials and perform the disinfecting, flushing, and testing as necessary for meeting the water quality requirements.

The flushing operations and the form of chlorine and method of application to be used will be subject to approval by the Engineer.

STORM SEWER CONSTRUCTION REQUIREMENTS

- Unless otherwise noted, all existing drain tile encountered during the course of the work will be repaired if damaged by the work, or if the existing outlet is known to be removed or made dysfunctional, hooked up to the new storm sewer improvements. This work is incidental to the contract.
- Where existing tile lines, sump pump lines, or other existing drainage lines are tied into RCP storm sewer lines, a hole will be created in the upper 1/3 of the side of the new storm sewer, the existing line will be inserted into the side of the new RCP to a depth of not greater than 2", geotextile fabric will be blanketed around or stuffed into the opening around the new pipe, and cement grout will be formed around the connection, so as to ensure water tightness.
- Where existing tile lines, sump pump lines, or other existing drainage lines are tied into HPDE storm sewer, fittings specifically manufactured for the connection of these lines will be used.
- All existing drainage structures receiving new pipe will be cemented water tight around all pipes entering or exiting the structure. In addition, the inverts of all structures will be cemented so that all water entering the structure has a direct line out of the structure.
- All new drainage structures will have integrally cast rubber boots to accept pipes and to ensure water-tightness. Worm screw stainless steel bands will be affixed to the boots to secure the pipe to the structure.
- HDPE pipe will be installed accordance with ASTM F2306.
- PVC solvent weld joints will include a primer of contrasting color to the pipe and cement (see Minnesota Rules, part 4715.0810, subpart 2).
- RCP storm sewers must comply with ASTM C76 (see Minnesota Rules, part 4715.0540).
- All joints and connections in the storm sewer system shall be gastight or watertight (see Minnesota Rules, part 4715.0700). Approved resilient rubber joints must be used to make watertight connections to manholes, catchbasins, and other structures. Cement mortar joints are permitted only for repairs and connections of existing lines constructed with such joints (see Minnesota Rules, part 4715.0750).

REMOVALS (2104)

Saw-cut Bituminous and/or Saw-cut Concrete

The edges of paving at the locations shown on the plan or directed as directed by the Engineer in the field will be full-depth saw-cut, typically at right angles to the faces to remain, in order to produce a clean edge of which to match the replacement paving or other surface to. Saw-cutting is incidental to the removals.

Remove Bituminous and/or Concrete Surface

After removal of bituminous or concrete surfacing in the traveled way, an aggregate surface will be provided in the removal area to the elevation of the removed materials. A minimum thickness of 6" of aggregate at the surface will be provided. This work is incidental to removals.

Disposal of Removed Materials

The removed materials will become property of the Contractor and be removed from the project site at the Contractor's expense.

Remove Storm Sewer

When existing storm sewer is designated to be removed, the existing pipe will be removed in its entirety, or crushed in its entirety and backfilled over, if directed by the Engineer.

EXCAVATION AND EMBANKMENT (2105)

- The area designated for excavation will be excavated to sufficient depth to allow construction of the typical section shown on the plans except as otherwise directed by the Owner. The Contractor will verify to the Owner that the subgrade has been constructed to the proper elevation before base construction proceeds. The subgrade must be within 0.10' plus or minus of plan elevation before the construction is allowed to proceed. A subgrade elevation consistently above or below plan elevation will not be considered acceptable work. On average, the subgrade will be at about plan elevation.
- Excess excavated material will be disposed of by the Contractor. Excess topsoil material will be stockpiled separately or leveled, as directed by the Owner. Stockpiling and leveling will be considered incidental to the excavation, and will not be paid for directly.
- The contractor will salvage and stockpile suitable topsoil and surface material to the satisfaction of the Owner as necessary to provide for final seed and turf establishment and restoration. Topsoil salvage will be considered incidental to excavation and no direct compensation will be made therefore.
- Removal of rocks, boulders, masonry or concrete within the excavated area will be considered common excavation. All roots, stumps, rubbish, rocks and other waste materials will be hauled to the nearest landfill. This work will be considered incidental to the construction and will not be paid for directly.
- Paving sections will be required to allow construction of the typical cross-section. Embankment will be constructed in accordance with the provisions of 2105. Suitable excess excavated materials will be utilized for embankment to the fullest extent practicable. The remaining embankment material will be granular borrow conforming to the provisions of 3149.2A.
- Site grading will be performed as required to establish plan grade. All excess becomes property of the Contractor to be disposed of off-site.
- All borrow or salvaged excavated material to be used as embankment within the limits of paving construction will be approved by the Owner prior to placement. Embankment will comply with the provisions of Minnesota Department of Transportation Spec. 2112 including achieving 100% compacted density in the upper 3 feet of subgrade and 95% below the upper 3 feet of subgrade.
- All natural topsoils will be removed from below all paving construction areas.
- Suitable excavated material will be used as backfill. Embankments and boulevards not being seeded or sodded will be dragged or raked smooth prior to completion of each project.
- Excess excavated material, excluding rocks, boulders, debris and organic material, will be the property of the Owner and will be stockpiled on site as directed by the Owner. All other excess material will be disposed of by the Contractor offsite.
- When embankment materials are placed on existing ground with an existing slope of greater than 4:1, the embankment will be placed in accordance with 2105.3.B.
- Where excavation is performed to the subgrade without the placing of embankment materials, the contractor will work the upper 1' of the subgrade to within 2% of optimum moisture prior to the test-rolling stated below. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction.
- Backfill construction of concrete curb and gutter in accordance with 2531.J is incidental. The contractor will note that when this work is complete, continuous positive drainage is provided to the curb & gutter, which is defined by the MPCA as a stormwater conveyance.

TOPSOIL SALVAGE

All areas to be seeded will be finished with no less than 6 inches (6") of topsoil salvage. This topsoil will be raked to a smooth surface free of roots, rocks and soil clumps. Topsoil salvage will be incidental to the project.

All areas to receive fill material are subject to topsoil salvage. Topsoil may be placed over existing topsoil.

SUBGRADE PREPARATION (2112)

- The provisions of 2112 will be follows and as outlined in 2112.
- The final shaping and compacting of the subgrade will be done just prior to placing any base or surface course.
- At the time the subgrade preparation operations have been completed, the prepared surface will be in reasonably close conformity with the cross sections shown in the Plans and the lines and grades shown on the plan.
- Where excavation is performed to the subgrade with or without the placing of embankment materials, the contractor will work the subgrade to within 2% of optimum moisture. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to a minimum depth of 12" to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction.
- The required stability will be such that when any material for base or surface courses is deposited on the subgrade, no rutting or displacement will occur.
- The subgrade preparation prior to construction of underground utilities will not be subject to elevation tolerances.
- Subgrade preparation is incidental to the contract

S-7 SUBGRADE COMPACTION

The subgrade when exposed will be compacted with a tamping roller, compactor or other means to not less than 100% Maximum Density and 2% Optimum Moisture. The Contractor will work the upper 1' of the subgrade to within 2% of optimum moisture during compaction. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction.

Prior to placement of any stabilized base, a fully loaded dual axel dump truck will be driven over the completed sub-grade in the presence of the Contractor and Engineer present. The subgrade will be found suitable for placement when no rutting or displacement occurs. The test-rolling will be incidental to stabilized base and no specific payment will be made therefore.

S-8 SUBGRADE CORRECTION

If after substantial efforts by the contractor to correct the moisture content of the subgrade and re-compact the materials, the subgrade displays evidence of rutting or yielding prior to, during, or after this compactive effort, additional material will be excavated as directed by the Owner to the depth required to provide a stable foundation for the base material.

Suitable material removed during excavation will be utilized for subgrade correction. This work will not be paid as Extra Work if it was or would have been, or could have been performed as part of any other grading activity.

STABILIZED BASE CONSTRUCTION (2211)

This work will consist of the excavation and embankment of existing subgrade and surface materials, and the construction of aggregate base.

- Aggregate base will be either MnDOT Class 2 or Class 5, at the Contractor's option. Class 7 recycled base is acceptable where allowed in the MnDOT standard specifications.
- AGGREGATE: Aggregate for the purposes required by this contract will be furnished by the Contractor from sources selected by him.
- AGGREGATE BASE: Aggregate base, will be constructed in accordance with the provisions of 2211. Aggregate will conform to the requirements of 3138.
- Compaction will be obtained by the Modified Penetration Index Method modified as follows: The Owner will hire an independent testing laboratory to perform density and moisture testing. Moisture tests will be performed with each density test. Tests will be performed in accordance with the Materials Testing Section above. Penetration and moisture content testing will be performed along with to the density tests. No payment will be made for work tested that fail to meet the specified density. The Contractor will be responsible for any additional tests due to the failure of work. Water will be applied to the base material during mixing, spreading and compaction operations for proper compaction and will be considered incidental work.
- Test rolling will be performed on the aggregate base in the presence of the Owner's testing subconsultant. Test rolling will be as specified in MnDOT specification 2111 except that the test will be performed with a fully loaded tandem axel dump truck in lieu of the test roller. The Owner may delete the requirement for test-rolling on all or portions of the stabilized base, at his discretion, after consultation with the Contractor.
- Furnish and install Aggregate Base, Class 5 meeting MN/DOT Specification No. 3138 under all concrete or bituminous pavements and a minimum of 2 inches of Aggregate Base, Class 5 under all curb and gutter.

MAINTENANCE OF COMPLETED BASE

After completion of any part of the base, such base will be maintained in a dust free condition. It will be the Contractor's responsibility to repair at his expense all prepared and shaped surfaces until project is complete. Any water applied to keep the base dampened or reshaped will be at the Contractor's expense.

The Contractor will maintain the completed aggregate base after rain events, and replace and recompact any eroded aggregate as work incidental to the contract.

Maintenance of completed base is incidental to construction.

APPLICATION OF WATER (2130)

Application of water will be in accordance with the provisions of 2130 except as herein modified. No direct compensation will be made for water used in conjunction with the mixing, placing and compacting operations for base construction.

The contractor is responsible for application of water for dust control in accordance with Mn/DOT 1717 and with the NPDES permit. Application of water for dust control is incidental to the work and no additional payment will be made therefore.

CONCRETE PAVEMENT (2301)

Jointed Type 3 Grade A Plain Concrete Pavement will be placed in accordance with the Mn/DOT standard specifications except as modified herein. The mix designs for concrete paving for this project are:

Standard Paving - 3A41
High Early Strength (if directed by Owner) - 3A41HE
Flexural strength at 28 days will be 750 psi.
Compressive strength at 28 days will be per the mix designations above.

High Early concrete areas will remain closed to traffic for 3 days or until they have achieved a flexural strength of 450 psi, whichever is shorter. Concrete will be supplied from a Mn/DOT certified producer. The Contractor will be responsible for supplying the mix designs. The Contractor will provide the Engineer with the mix designs a minimum of 24 hours prior to the first pour.

Concrete will be cured by the use of membrane curing compound meeting the requirements of Mn/DOT 3754 AMS.

All joint sealant will conform to 3723, Concrete Joint and Crack Sealer (Hot-Poured Elastic Type) sealant.

Transverse metal-time finishing will not be required.

The location of transverse joints may be adjusted in the field by the Engineer. An increase in the number of transverse joints of up to five percent (5%) compared to the number shown on the plans will be incidental.

All coarse aggregate for concrete pavement will meet the gradation requirements of Mn/DOT 3137 CA-50.

BITUMINOUS TACK COAT (2357)

Treating existing bituminous or concrete surfaces preparatory to placing a bituminous course thereon will be performed in accordance with the provisions of MN/DOT 2357 and the following:

A bituminous tack coat consisting of emulsified asphalt will be applied between all bituminous surfaces. A tack coat will be placed on the existing pavement prior to placing the next layer of bituminous and the edges of concrete pavement and curb and gutter that will come into contact with the new bituminous will be tacked. All surfaces will be cleaned of all dirt, debris and loose material prior to the application of the bituminous tack coat.

PLANT MIXED ASPHALT PAVEMENT (2350/2360)

Plant mixed asphalt pavement density will be constructed in accordance with Mn/DOT specification 2360, as published by Mn/DOT at the time of bid.

CONCRETE MIX FOR CURB & GUTTER, WALKS, & DRIVEWAYS (2461)

Concrete for this Contract will be as follows and as outlined in 2461:

The concrete mix number to be used for slip form curb and gutter will be 3A22. The concrete mix number for hand formed curb and gutter, sidewalks, and driveways will be 3A32.

	<u>Minnesota Highway Designation</u>	<u>Minnesota Highway Designation</u>
<u>Mix Number</u>	3A32B	3A22B
<u>Type of Concrete</u>	Type 3 (Air Entrained)	Type 3 (Air Entrained)
<u>Grade</u>	Grade A	Grade A
<u>28 Day Strength</u>	27 Mpa (3900 psi)	27 Mpa (3900 psi)
<u>Slump</u>	50 mm to 75 mm (2" to 3")	25 mm to 50 mm (1" to 2")
<u>Coarse Aggregate Composition</u>	100% Class "B"	100% Class "B"
<u>Gradation of Coarse Aggregate</u>	CA25 or CA50 For Structural Concrete	CA25 or CA50 For Structural Concrete

Concrete will be supplied from a Mn/DOT certified producer. The Contractor will supply the mix designs. The Contractor will provide the Engineer with the mix design a minimum of 24 hours prior to the first pour.

WALKS (2521)

Concrete sidewalks will be constructed in accordance with 2521 and Standard Plate 7035. Preformed joint filler material will be placed in accordance with Standard Plate 7035. Concrete sidewalks will be mix design 3A32 with a maximum slump of 3". No water will be added to the mix to reduce the slump beyond 3" for temporary workability, as stated in 2461.B3.

CONCRETE CURING AND PROTECTION (2521, 2531)

All sidewalk, driveway, curb and gutter will be cured using a membrane curing compound conforming to the requirement of Minnesota Highway Department #3754.

For concrete curb and gutter poured after October 1st, blanket or extreme service membrane methods of curing will be substituted for membrane curing, in accordance with 2531.

REV.	BY	DATE
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415 West North Street Owatonna, MN 56051-4598

DESIGNED: <i>JHS</i>
DRAWN: <i>JHS</i>
CHECKED: <i>BAJ</i>
Date: JULY 2017
DWG: 17-210DESIGN

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

[Signature]
John H. Schulte V
License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
SPECIFICATIONS

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SPECIFICATIONS

EXTREME TEMPERATURE CONCRETE

The following additional measures will be required for extreme temperature concrete construction, as work incidental to the contract:

Hot Weather Concrete Construction

1. Do not place concrete with a placing temperature that will cause difficulty from loss of slump, flash set, or cold joints.
2. Maintain a concrete temperature during placement of less than 90 degrees F.
3. Use all means necessary to avoid drying the concrete prior to the completion of finishing operations.
4. Provide and use windbreaks, sunshades, fog sprays, and other devices to protect the concrete.

Cold Weather Concrete Construction

1. Provide adequate protection when temperatures are 40 degrees F or lower occur during placing and early curing periods.
2. Comply with all pertinent recommendations of ACI 306 (Recommended Practice for Cold Weather Concreting).
3. Type IIIA cement may be used.
4. The use of Calcium Chloride or other accelerators will not be permitted.
5. Maintain a concrete temperature during placement of more than 60 degrees F.
6. Use all means necessary to avoid exposure of concrete to freezing temperatures during placement, finishing, and curing.
7. Concrete will not be placed on a frozen subgrade.
8. Provide and maintain heated enclosures, insulating blankets, tarpaulins, heaters, fuel, and all other protective equipment required.
9. Maintain favorable curing temperature at all times until the concrete gains sufficient strength to withstand exposure to low temperature and applied loads.

CONCRETE CURBING & GUTTER (2531)

Concrete curb and gutter will be constructed in accordance with the provisions of 2531 and the following: Curing will be by the Membrane Curing Method as specified in 2531.3G (2). The sealing of joints in concrete curb and gutter will not be required.

Construction joints in curb and gutter will be installed at 10-foot intervals. Preformed joint filler material (1/2-inch) will be placed at the ends of all street returns, at the ends of concrete driveway approaches, and in accordance with Mn/Dot Standard Plate 7035N.

Concrete curb and gutter will be the style shown on the plans.

PEDESTRIAN CURB RAMPS (2531)

Unless otherwise provided for in the Proposal, pedestrian curb ramps including the truncated dome section will be paid as square feet of concrete sidewalk, and will not constitute a separate pay item. Dome sections will be cast iron per the list of Mn/DOT approved suppliers.

Construct curb ramps in accordance with Mn/DOT Standard plan 5-297.250 and Standard Plate 7038

STORM WATER MANAGEMENT (2573)

The Stormwater Pollution Prevention Plan (SWPPP) required by the NPDES permit has been provided by the Owner and is incorporated into the plans and specifications.

The Minnesota Department of Transportation's Specification 2573 - Stormwater Management is hereby modified as follows:

1. The Contractor will comply with the provisions of the NPDES permit and the SWPPP (Stormwater Pollution Prevention Plan).
2. The Stormwater Pollution Prevention Plan provided by the Owner is meant and provided as a guide in the provision of Erosion and Sediment Control (ESC) Best Management Practices (BMP's) as required by the NPDES permit. The SWPPP is based on finish grade contours. Additional ESC measures, although not shown by the plan, may be required to comply with the provisions of the NPDES permit. Provision and maintenance of the ESC BMP's in accordance with the NPDES permit is the responsibility of the contractor, regardless of what is shown on the SWPPP. Interim ESC BMP's and updating of the SWPPP are the responsibility of the contractor. Maintenance of the ESC BMP's is incidental to the work and will be performed in accordance with 2573.M.
3. When updates to the SWPPP are required, the Contractor will provide the Engineer with sketches of the updated areas, so that the Engineer can update the SWPPP.
4. No additional payment will be made for additional ESC BMP's required by the NPDES permit but not shown on the SWPPP.
5. The contractor will obtain the NPDES permit from the MPCA and pay any applicable fees as work incidental to the contract. The contractor will remain named on the NPDES permit until the warranty period expires, at which time he/she may submit an NPDES Permit Modification/Transfer Form to the Owner for completion and submission to the MPCA.
6. The contractor will maintain the NPDES site inspection log.
7. The contractor will be responsible for all fines imposed by regulating agencies for failure to comply with the provisions of the NPDES permit.
8. If the Engineer determines that ESC BMP's have failed or require maintenance, the Contractor will correct the cause of failure, maintain the BMP's, and alleviate all sediment deposition outside the construction limits, to the fullest extent possible. If the Contractor fails to install or maintain erosion or sediment control measures required by the NPDES permit, fails to conduct required inspections, or fails to take action ordered by the Engineer to correct ESC problems, the Engineer will issue a written order to the Contractor. The Contractor will respond within 24 hours with sufficient personnel, equipment, and/or materials and conduct the required work or be subject to a \$500 per calendar day penalty for noncompliance. In addition, the Engineer may recommend that the Owner withhold payment from all work until the ESC BMP's are constructed or maintained.
9. The Engineer may require the Contractor to submit a site plan for certain portions of the work detailing proposed ESC BMP's, and a schedule indicating start and completion dates. The Contractor will not start work within these areas until the Engineer has accepted the site plan and schedule. No additional payment will be made for preparation of site plans required by the Engineer, or reasonable delays or production losses caused by this requirement.
10. Sediment removal required due to the failures to implement or maintain ESC BMP's will not be considered Extra Work. The Contractor will remove all sediment from areas accrued due to actions or inactions by the Contractor, at no cost to the Owner
11. Comply with all requirements of the the SWPPP Narrative.

Extreme Events

The determination of "extreme" weather events will be solely at the discretion of the Engineer. Unless the Engineer determines that an "extreme" event has occurred, no additional compensation will be remitted for ESC work due to precipitation events.

The Contractor may request the Engineer determine an "extreme" event if:
 4" or more of precipitation falls in less than 24 hours or
 Precipitation falls steadily for longer than 4 days

These conditions do not themselves determine an "extreme" event, the Engineer will determine if an "extreme" event has occurred.

No extension of contract time will be granted due to "extreme" events.

CONTROLLING EROSION AND ESTABLISHING VEGETATION (2575)

Mn/DOT Specification 2575 will be modified as follows:

1. The contractor will notify the Owner at least 24 hours in advance of performing any work under this section.
2. Seed rates will be as specified in Table 2575-2 or if not specified at a rate of 100 lbs per acre.
3. Temporary seed mixes will be interchangeable without changes to the contract price, depending on when the seeding occurs (spring or fall).
4. If the Contractor feels that the specified seed mix will not produce the desired cover, the Contractor will recommend an alternate seed mix for approval by the Owner.
5. Temporary seed mix for erosion control will be Mn/DOT Mix 100/110.
6. Type 1 mulch will be spread at a rate of 2 tons per acre.
7. Maintenance of sod and seeded areas will be in accordance with 2575.3L. All turf establishment includes maintenance.
8. Slow release fertilizer with 22-5-10 analysis will be placed on prepared areas to receive seed and mulch at a rate of 300 lbs per acre as work incidental to seed and mulch.
9. The contractor will water sod prior to rolling, and water a minimum of once per week through the maintenance period; unless the Owner determines that precipitation events preclude the need for watering.
10. Water placed as part of the turf establishment work is incidental to the work and will not constitute a separate pay item.
11. Disk anchoring of mulch is incidental to placement and will constitute a separate pay item.
12. Snow mulching will not be allowed. Frozen ground mulching will be used in lieu of snow mulching. Frozen ground mulching with the application of water in lieu of disk anchoring will be compensated as disk anchoring with no adjustment to the contract price.
13. Dormant sodding will be allowed in the boulevard areas behind the curb and gutter, when the Owner has authorized dormant sodding.

Dormant Seeding

When seeding and mulch has not been completed within the Contract time after October 20th, the Contractor will temporarily stabilize the areas requiring seeding in the fall/early winter, then dormant seed and fertilize the areas in the spring. Fertilizer will not be applied until the runoff from the spring snowmelt has ceased.

Tilling and Finish Grading

Prior to seeding, mulching, or sodding placement in lawn areas, including road ditches previously maintained in a "lawn type" condition, Contractor will cultivate the soils by rototiller or similar equipment to a depth of not less than 6 inches to bring soil to a uniformly friable condition. Bring lawn areas to a smooth, even, well drained surface. Remove stones and clay balls larger than 1" diameter, roots, brush, wire, grade stakes, or other objects that would interfere with planting or maintenance operations. Smooth undulations and irregularities in surface prior to establishing vegetation. Reconstruct flooded, washed out, and damaged areas are reestablish proper grades if needed. This work is incidental to construction.

GRANULAR MATERIAL (3149)

The provisions of Mn/DOT 3149.2J are hereby modified and supplemented as follows as work incidental to construction:

Fine Filter Aggregate

The Gradation for Fine Filter Aggregate is:

Sieve Size	Percent Passing
19.0 mm [3/4 inch]	100
9.5 mm [3/8 inch]	50-95
4.75 mm [No. 4]	20-60
2.00 mm [No. 10]	0-15
425 um [No. 40]	0-4
75 um [No. 200]	0-2

Coarse Filter Aggregate

The Gradation for Coarse Filter Aggregate is:

Sieve Size	Percent Passing
2 inch	100
1 1/2 inch	50-100
1 inch	0-10

Modified Breaker Run

Modified Breaker Run will be 100% crushed quarry rock, 3" diameter and finer, well graded, with less than 11% passing the 1" sieve.

A loose gradation for Modified Breaker Run is:

Sieve Size	Percent Passing
3 inch	100
2 inch	50-70
1 inch	0-10

A gradation for Modified Breaker Run will be submitted to the Engineer for approval at least 1 week prior to installation.

Stabilizing Aggregate

Stabilizing aggregate shall be Aggregate Base Class 2 or Class 5.

Stabilizing aggregate shall be used as backfill for areas excavated as subgrade excavation as directed by the Engineer.

GEOTEXTILE FABRIC TYPE V (3733)

Geotextile fabric placed in order to stabilize the subgrade will meet the requirements of Mn/DOT 3733 and the Mn/DOT Grading and Base Manual, latest revision. The fabric will be placed in the direction such that the strongest axis is perpendicular to the centerline.

MATERIALS FOR BIOFILTRATION/INFILTRATION BASINS

2" Choker Course Stone:

- #8 Stone - 3/8" Clean Crushed Stone
- #78 Stone - 3/8" to 1/2" Clean Crushed Stone
- #89 Stone - 1/4"-3/8" Clean Crushed Stone

Pipe Bedding Stone:

- #57 Stone - 1/2"-1 1/2" Clean Crushed Stone

30" Bio-retention Soils

Mix B: Enhanced filtration blend

A well-blended, homogenous mixture of:

1. 70 to 85 percent construction sand; and
2. 15 to 30 percent organic matter.

Sand: Provide clean construction sand, free of deleterious materials. AASHTO M-6 or ASTM C-33 washed sand.

Organic Matter: Mn/DOT Grade 2 compost

REV.	BY	DATE
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415 West North Street Owatonna, MN 56051-4598

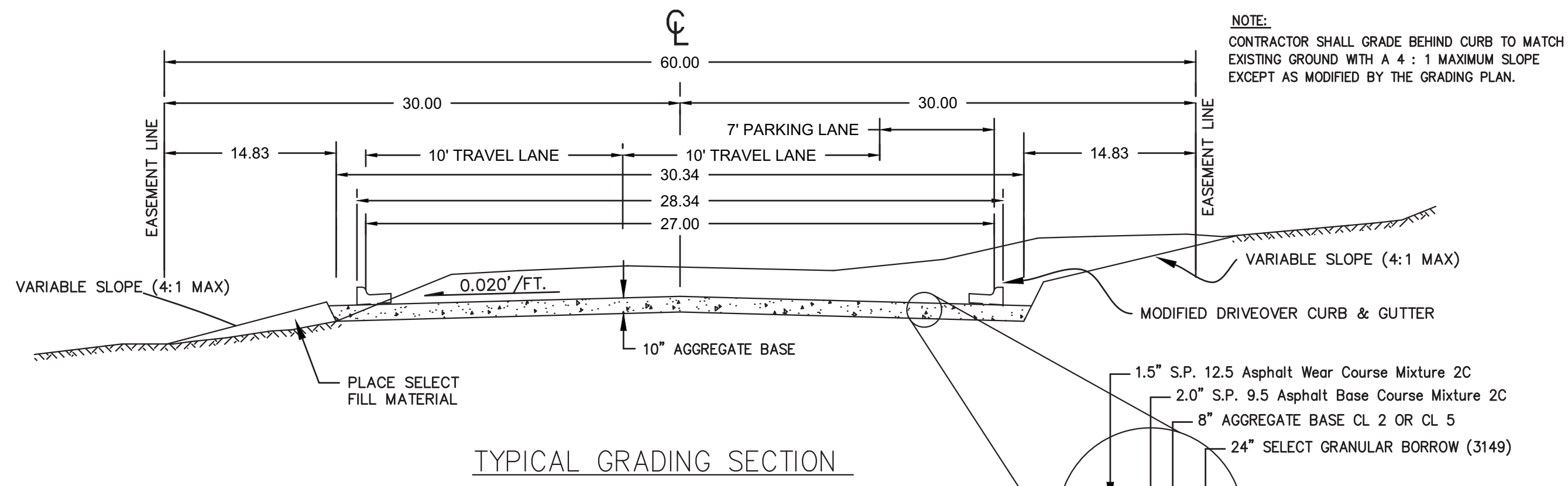
DESIGNED: <i>JHS</i>
DRAWN: <i>JHS</i>
CHECKED: <i>BAJ</i>
Date: JULY 2017
DWG: 17-210ES10V

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

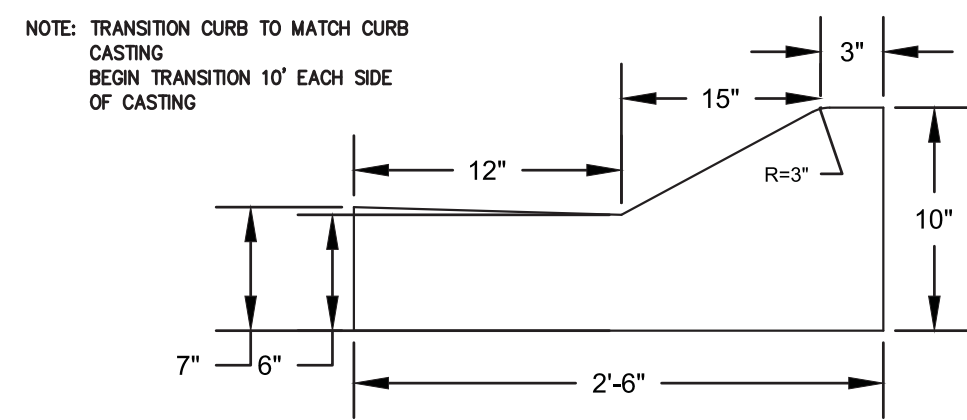
[Signature]
 John H. Schulte V
 License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
 2017-2018 CONSTRUCTION
SPECIFICATIONS

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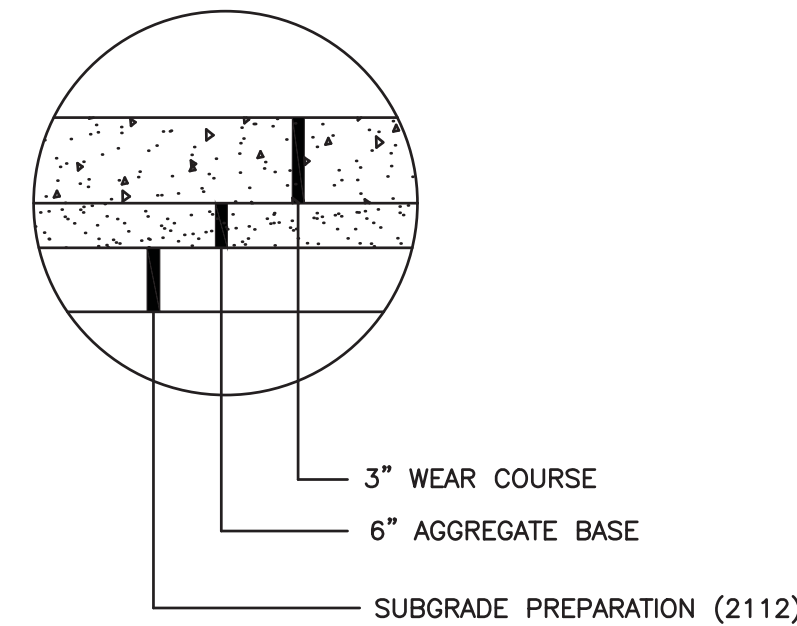


1. PREPARE SUB GRADE ACCORDING TO MN/DOT SPEC.2112 BEFORE PLACING SELECT GRANULAR BORROW.
2. CONTRACTOR SHALL PROTECT PROPERTY CORNER MONUMENTS. DO NOT EXCAVATE OR FILL WITHIN 2 FT. OF MONUMENT.
3. WHEN A FRONTAL EASEMENT EXISTS ON EITHER SIDE OF THE STREET R/W, THE EMBANKMENT SHALL BE CUT OR FILLED TO THE EASEMENT LINE.

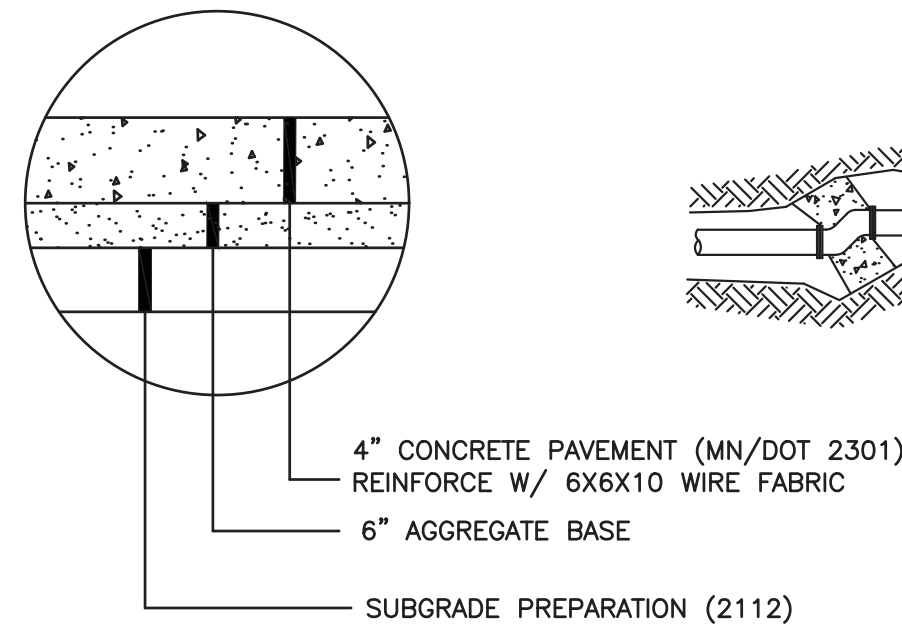


CONTRACTION JOINTS - 1/8" W x 2" D @ 10' O.C.
EXPANSION JOINTS - 1/2" PREFORMED JOINT MATERIAL - FULL DEPTH

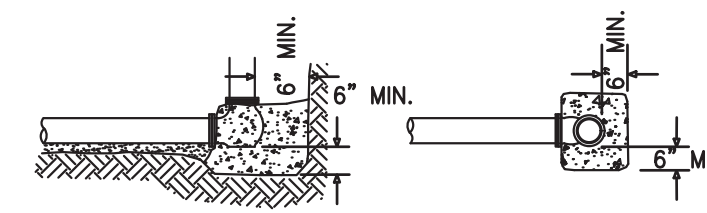
MODIFIED DRIVEOVER CURB
(NO SCALE)



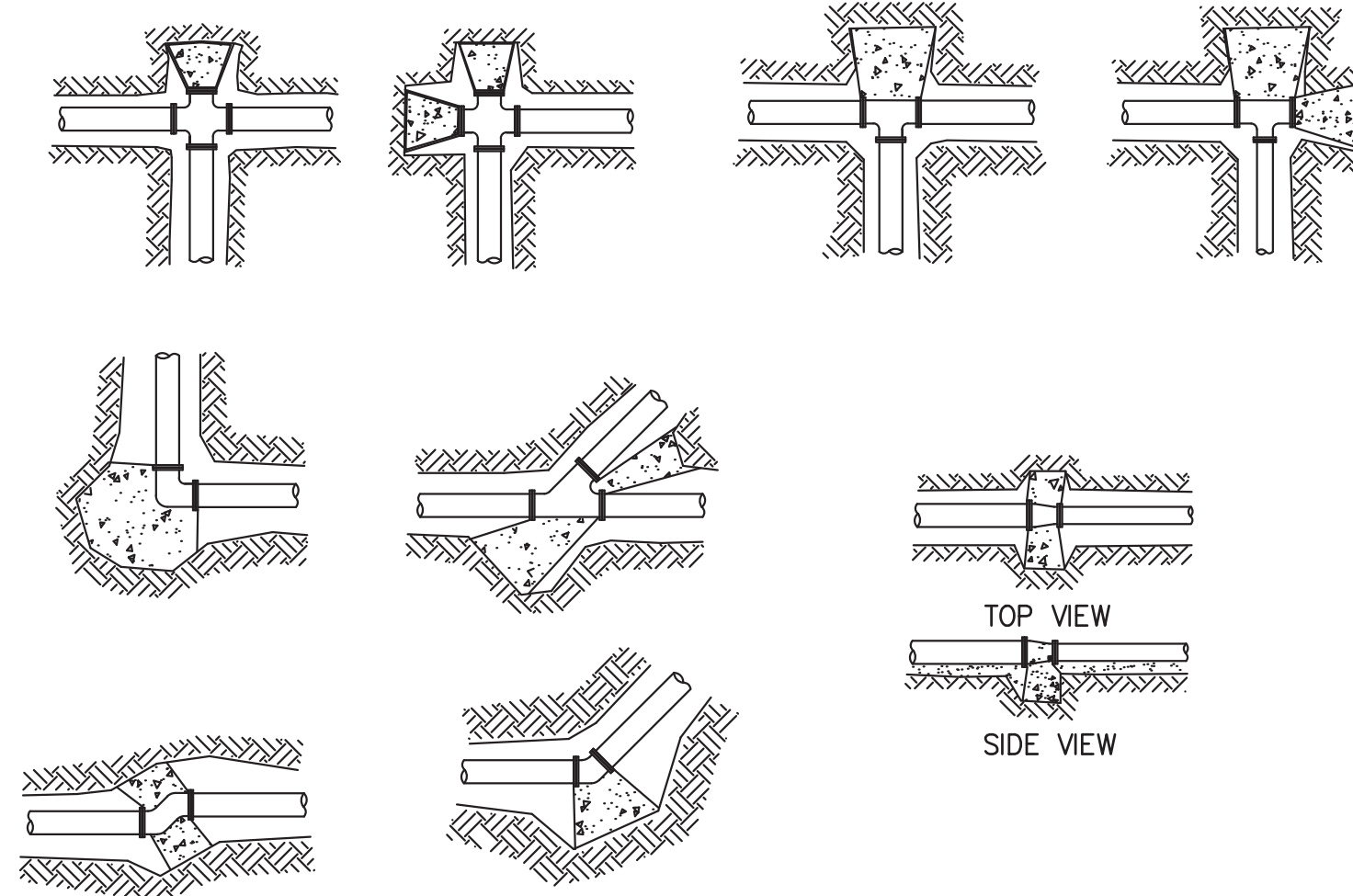
BITUMINOUS TRAIL SECTION



CONCRETE SIDEWALK SECTION



INSTALLATIONS AT HYDRANTS



MISCELLANEOUS INSTALLATIONS

NOTE:

ALL PLUGS IN TEES, CROSSES, AND, GATE VALVES; ALL BENDS GREATER THAN 1/32, AND ALL TEES SHALL BE BLOCKED BY PLACING CONCRETE BETWEEN THE FITTING AND THE UNDISTURBED TRENCH WALL. THE CONCRETE BLOCKING SHALL BE TWO PIPE DIAMETERS OR A MINIMUM OF 12 INCHES FROM THE FITTING TO THE UNDISTURBED TRENCH WALL. THE MINIMUM BEARING SURFACE AREA OF CONCRETE ON THE UNDISTURBED TRENCH WALL SHALL BE IN SQUARE FEET AS FOLLOWS:

PIPE SIZE	TEE OR PLUG	1/4 BEND	1/8 BEND	1/16 BEND	1/32 BEND
6"	2.9	3.1	1.6	0.8	0.8
8"	3.7	5.3	2.9	1.4	1.4
10"	5.7	8.1	4.4	2.2	2.2
12"	8.1	13.4	6.6	3.2	3.2
16"	15.1	21.4	11.6	5.9	5.9
20"	23.2	30.2	18.1	9.3	9.3
24"	33.6	48.5	26.1	13.3	13.3

CONTRACTORS ARE REQUIRED TO SIZE CONCRETE BLOCKING ON FITTINGS AND DEAD ENDS WHERE THE BLOCKING MUST WITHSTAND THE PRESSURE OF THE LARGER MAINLINE FITTINGS EQUIPPED WITH REDUCERS. THE BLOCKING SHALL BE SIZED FOR THE LARGER SIZE MAINLINE THRUST AND NOT FOR THE SMALLER FITTING SIZE ONLY.

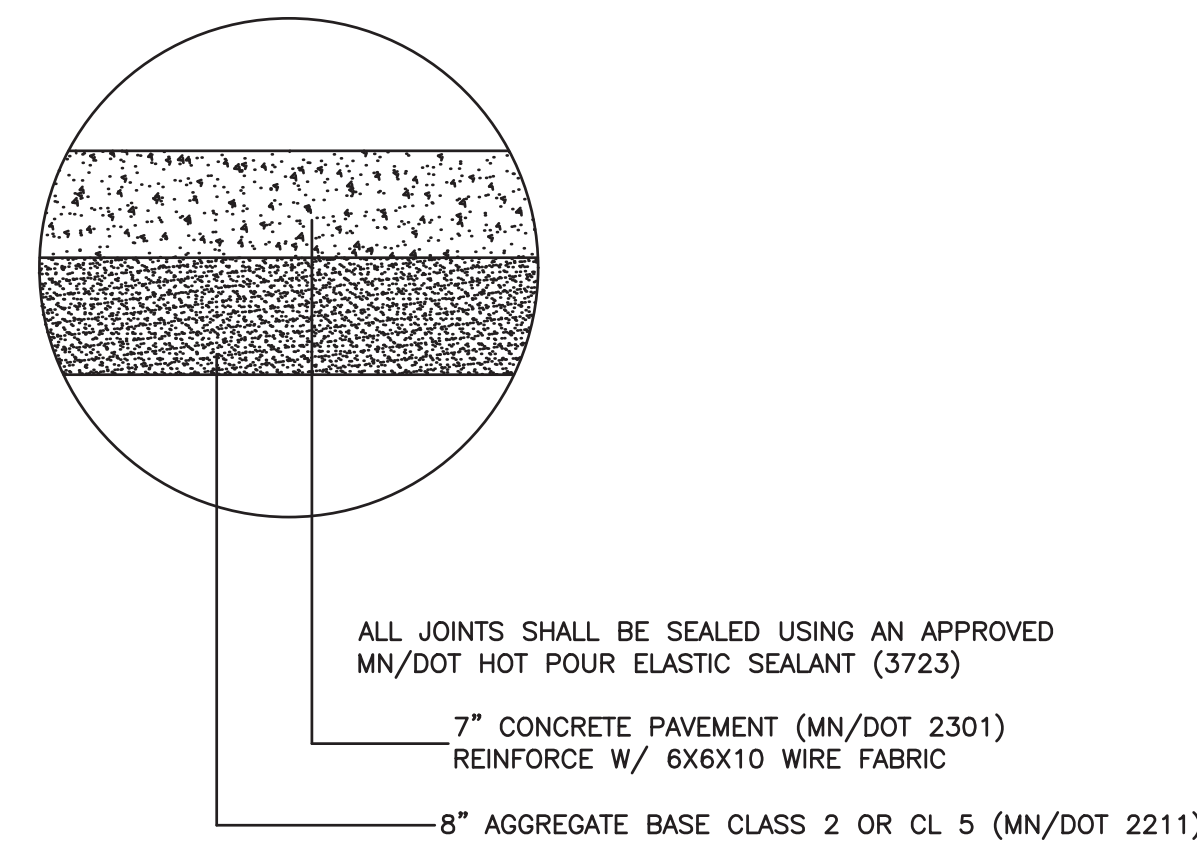
CONTRACTOR SHALL PLACE AN 8"x12"x4" CONCRETE BLOCK UNDER AND SUPPORTING ALL VALVES, CROSSES, TEES, BENDS, REDUCERS, SLEEVES AND HYDRANTS.

PRESSURE PIPE THRUST BLOCKING DETAIL

STORM SEWER MANHOLE SCHEDULE								
NO.	RIM/GRATE ELEV.	INVERT ELEV.	DEPTH	CASTING			DESIGN	REMARKS
				A	B	C		
A	1221.75	1215.60	6.15		X		48-4020	
B	1225.02	1216.30	8.72		X		48-4020	

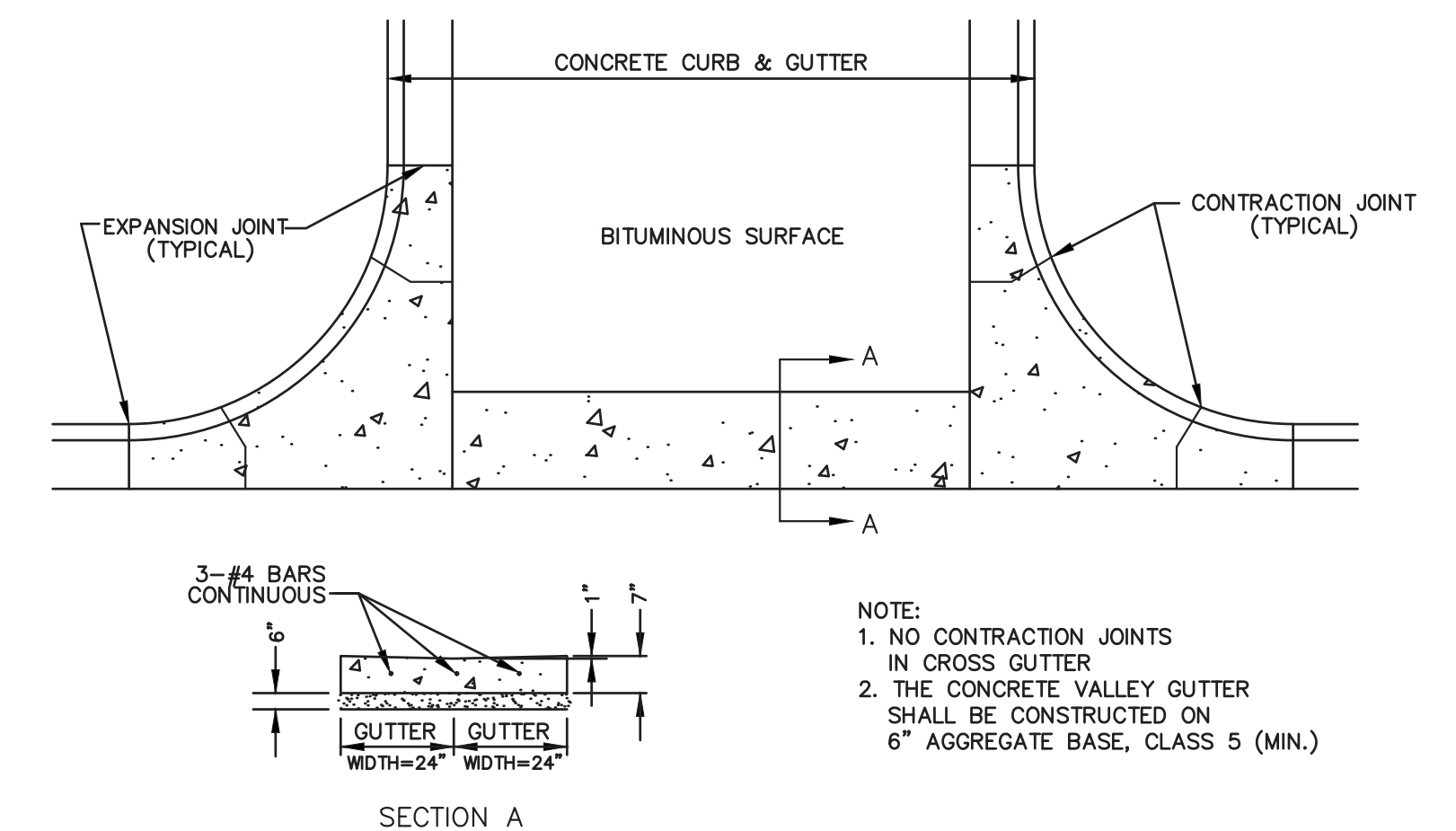
SANITARY SEWER MANHOLE SCHEDULE								
NO.	RIM ELEV.	INVERT ELEV.	DEPTH	CASTING			DESIGN	REMARKS
				A	B	C		
1	1224.00	1216.16	7.84	X			M4007C-48	
2	1223.29	1215.67	7.62	X			M4007C-48	
3	1222.63	1214.47	8.16	X			M4007C-48	
4	1223.36	1214.12	9.24	X			M4007C-48	

CASTING SCHEDULE					
TYPE	FRAME CASTINGS	COVER CASTINGS	CURB INLET BOX	GRATE CASTINGS	STRUCTURE
A	700-7	SELF SEALING			SANITARY MANHOLE
B	700-7	712			STORM MANHOLE



CONCRETE DRIVEWAY SECTION

ALL CONCRETE SHALL BE PORTLAND CEMENT CONCRETE PAVEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, A 4" MAXIMUM SLUMP AND 5% - 7% ENTRAINED AIR.



CONCRETE VALLEY GUTTER

NOT TO SCALE

REV.	BY	DATE
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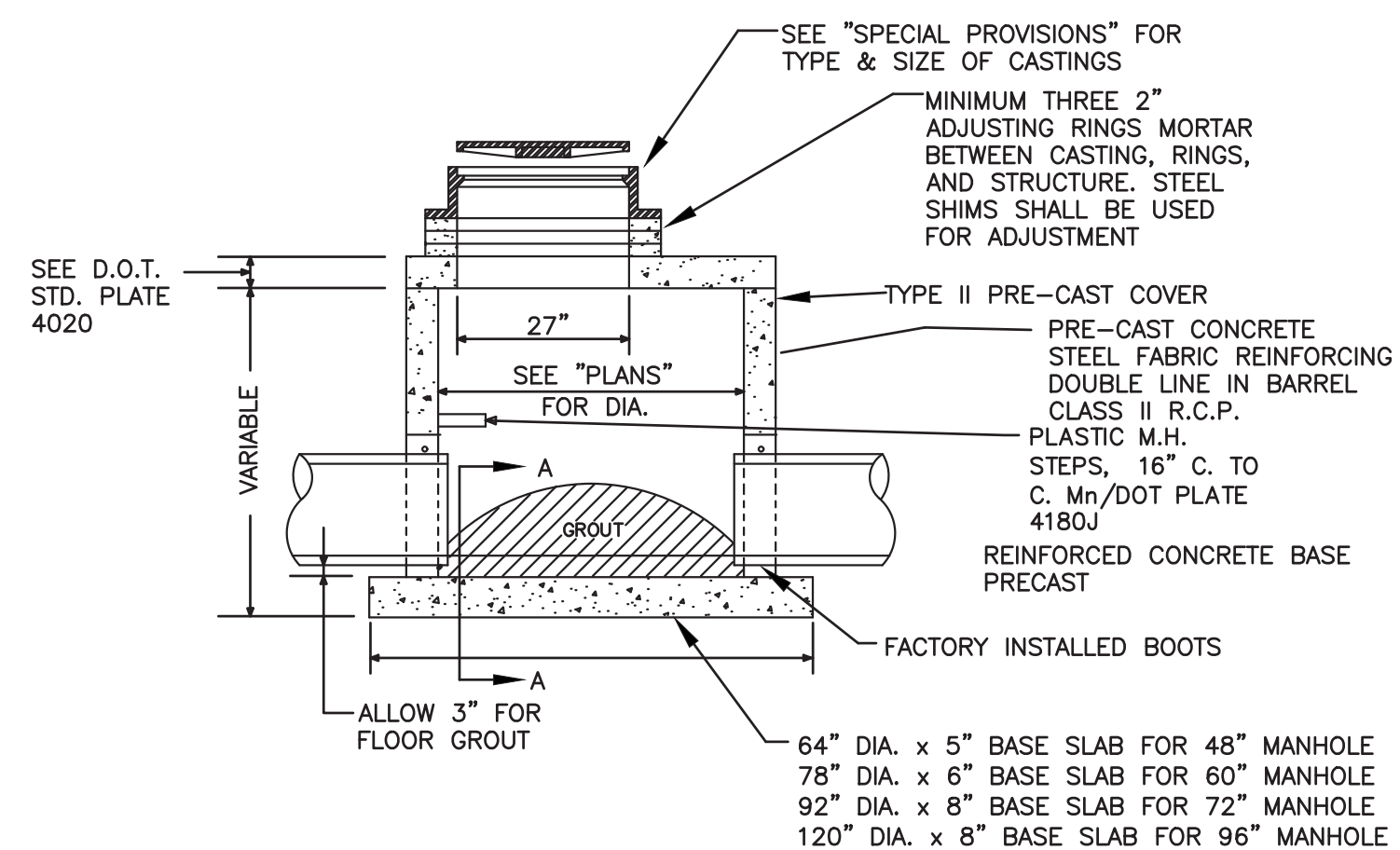
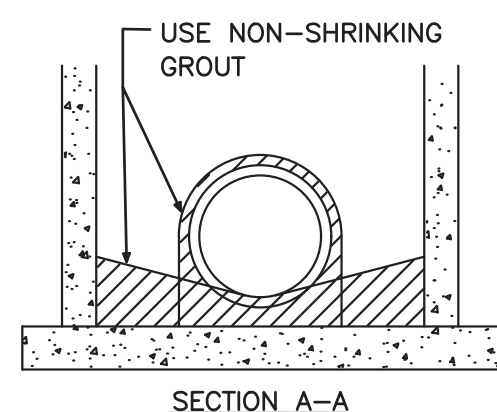
415 West North Street Owatonna, MN 56001-4598

DESIGNED: JHS
DRAWN: JHS
CHECKED: BAJ
Date: JULY 2017
DWG: 17-210DESIGN

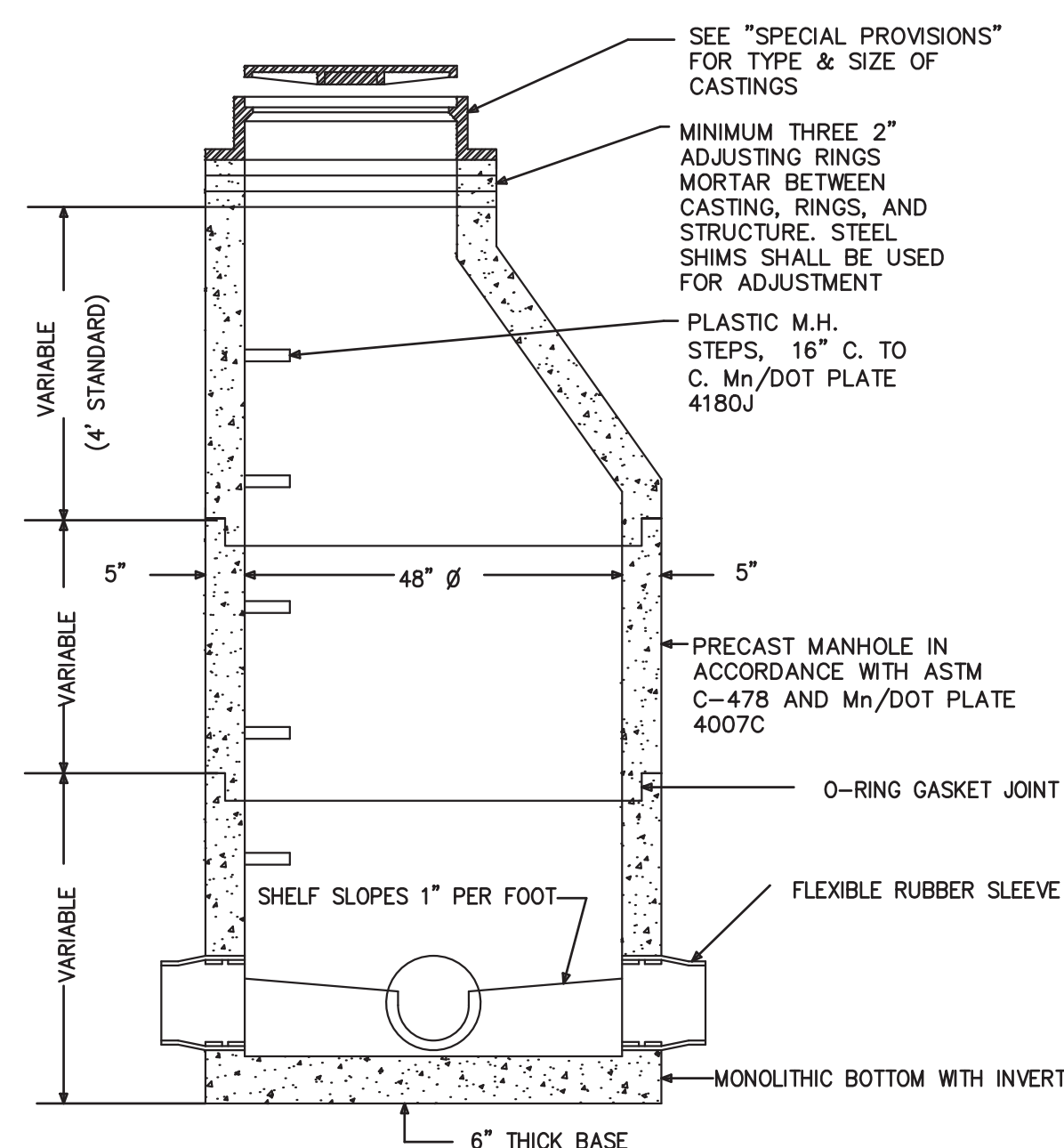
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional-Engineer under the laws of the State of Minnesota.
John H. Schulte V
License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
TYPICAL SECTION & DETAILS

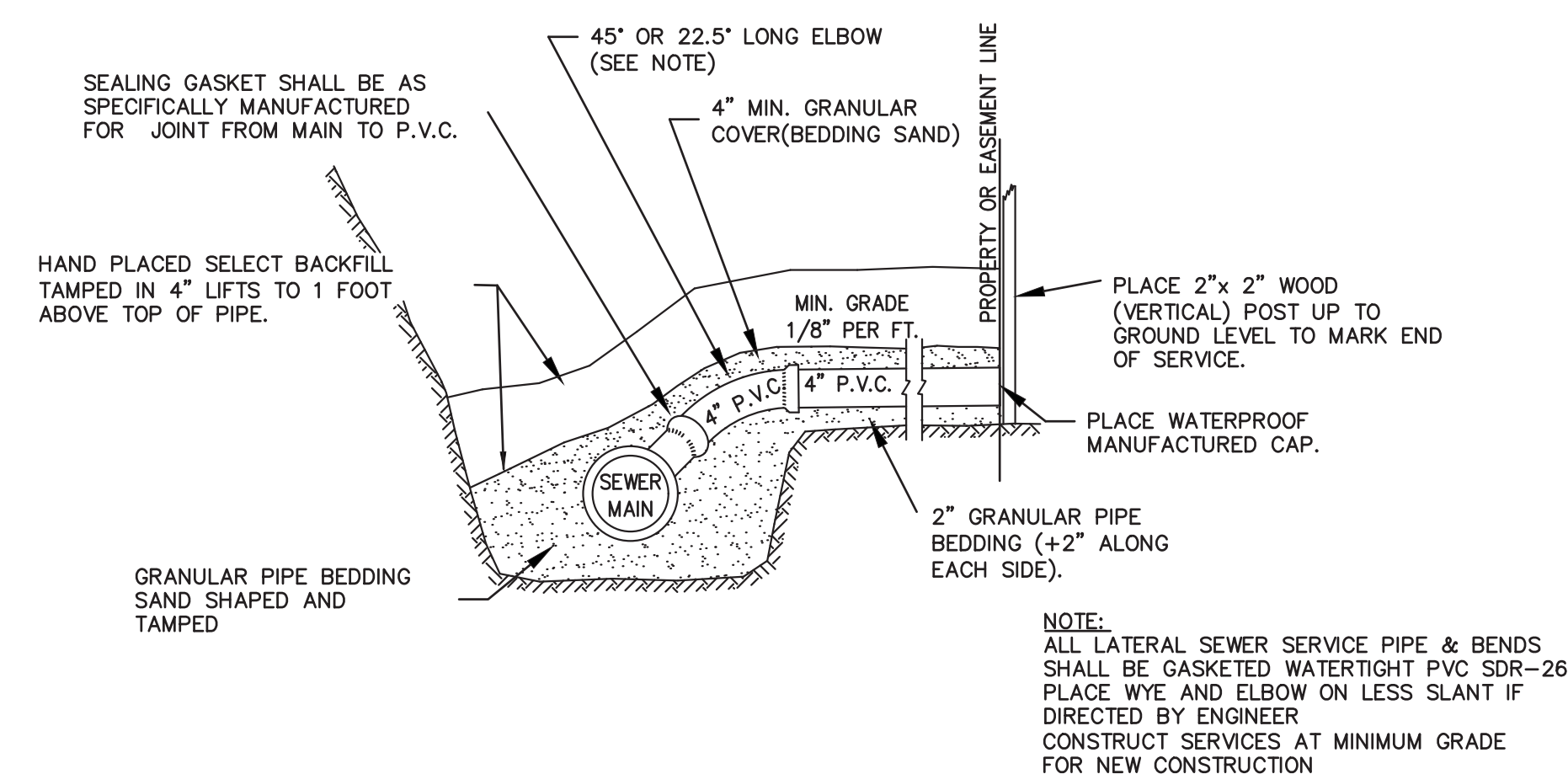
SHEET
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OF
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DRAINAGE STRUCTURE, DESIGN 4020



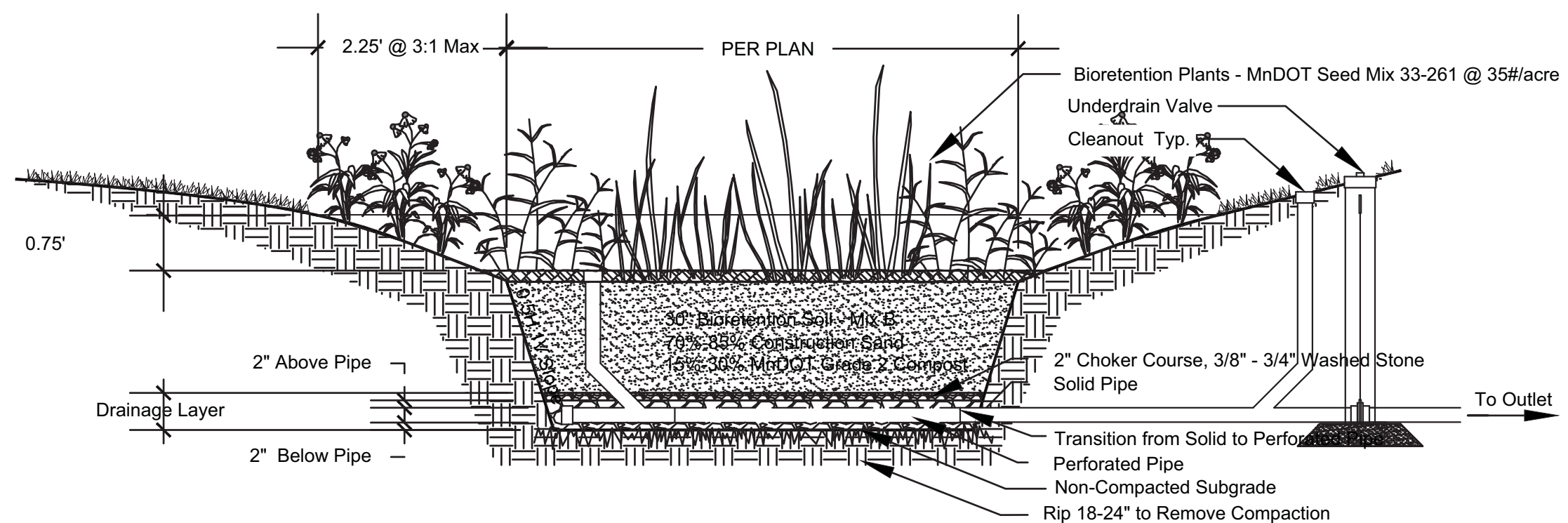
STANDARD MANHOLE, F-MOD (4007-48)



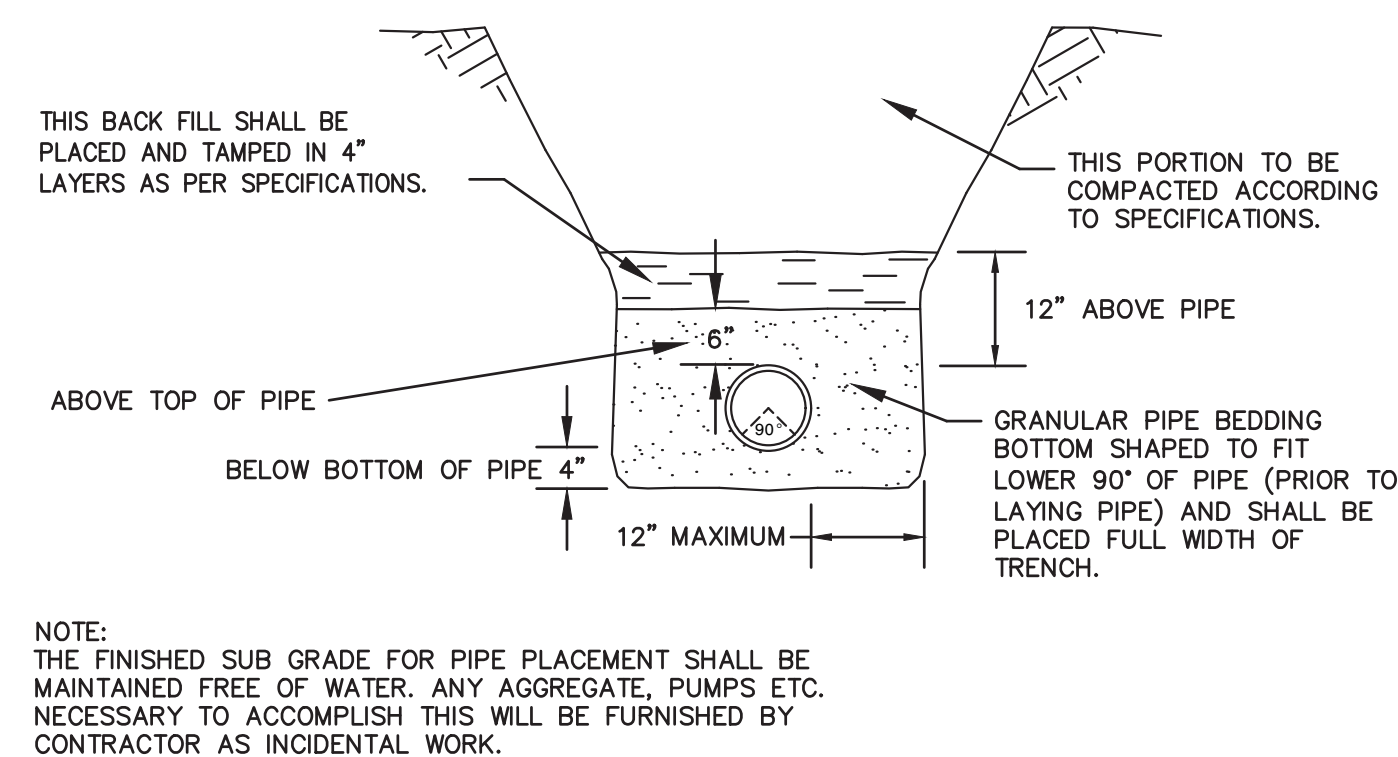
TYPICAL SANITARY SEWER SERVICE
(WHERE COVER OVER SEWER IS 13 FT. OR LESS)

CONSTRUCTION SEQUENCING - Filtration Basins Cut from Existing Fill Materials or from Embankment Areas

1. Install perimeter site erosion and sediment controls.
2. Mass grade the site ignoring the basin. Grade to the top elevations of the basin.
3. Install silt fence upstream of the basin area.
4. Protect the basin from sedimentation during building and gravel surface construction.
5. Perform continuous inspections of erosion control practices, especially after each rainfall event.
6. Complete, stabilize, and vegetate all other site improvements.
7. Construct and vegetate bioretention device following stabilization of contributing drainage area. Ensure that critical elevations, such as underdrain invert, top of media, top of mulch, and invert of overflow rip rap are correct.
8. Remove temporary erosion control devices after the contributing drainage area is adequately vegetated and hard surfaced.



BIO-FILTRATION SWALE



TYPICAL TRENCH
(PVC SEWER)

NOT TO SCALE

REV.	BY	DATE



415 West North Street Owatonna, MN 56051-4598

DESIGNED: JHS
DRAWN: JHS
CHECKED: BAJ
Date: JULY 2017
DWG: 17-210230W

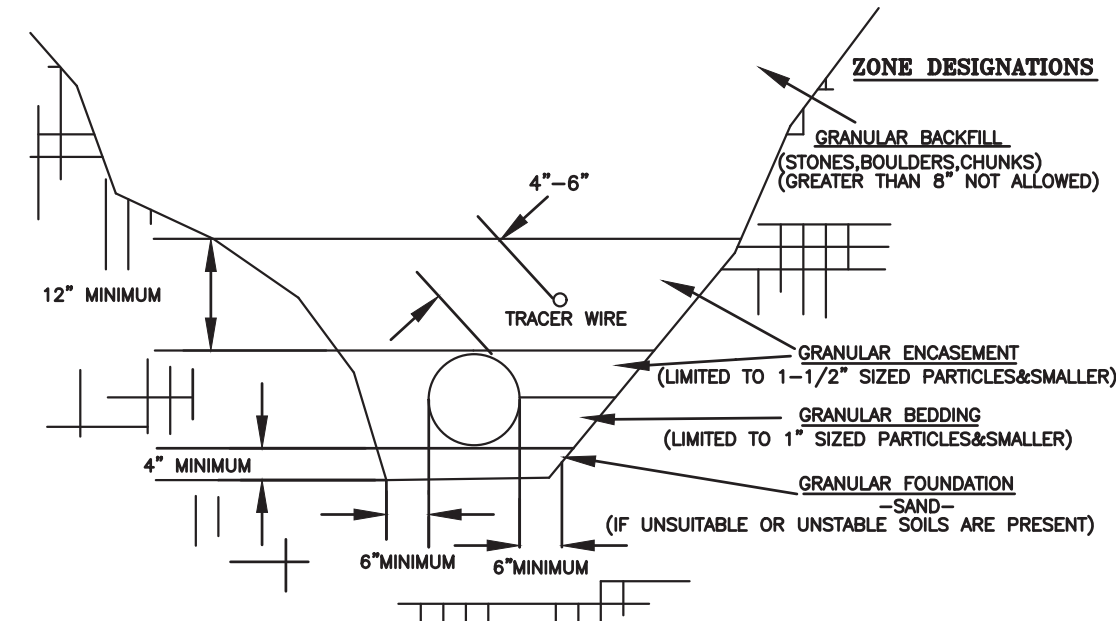
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John H. Schulte V
John H. Schulte V
License No. 44639 Date: 8/17/17

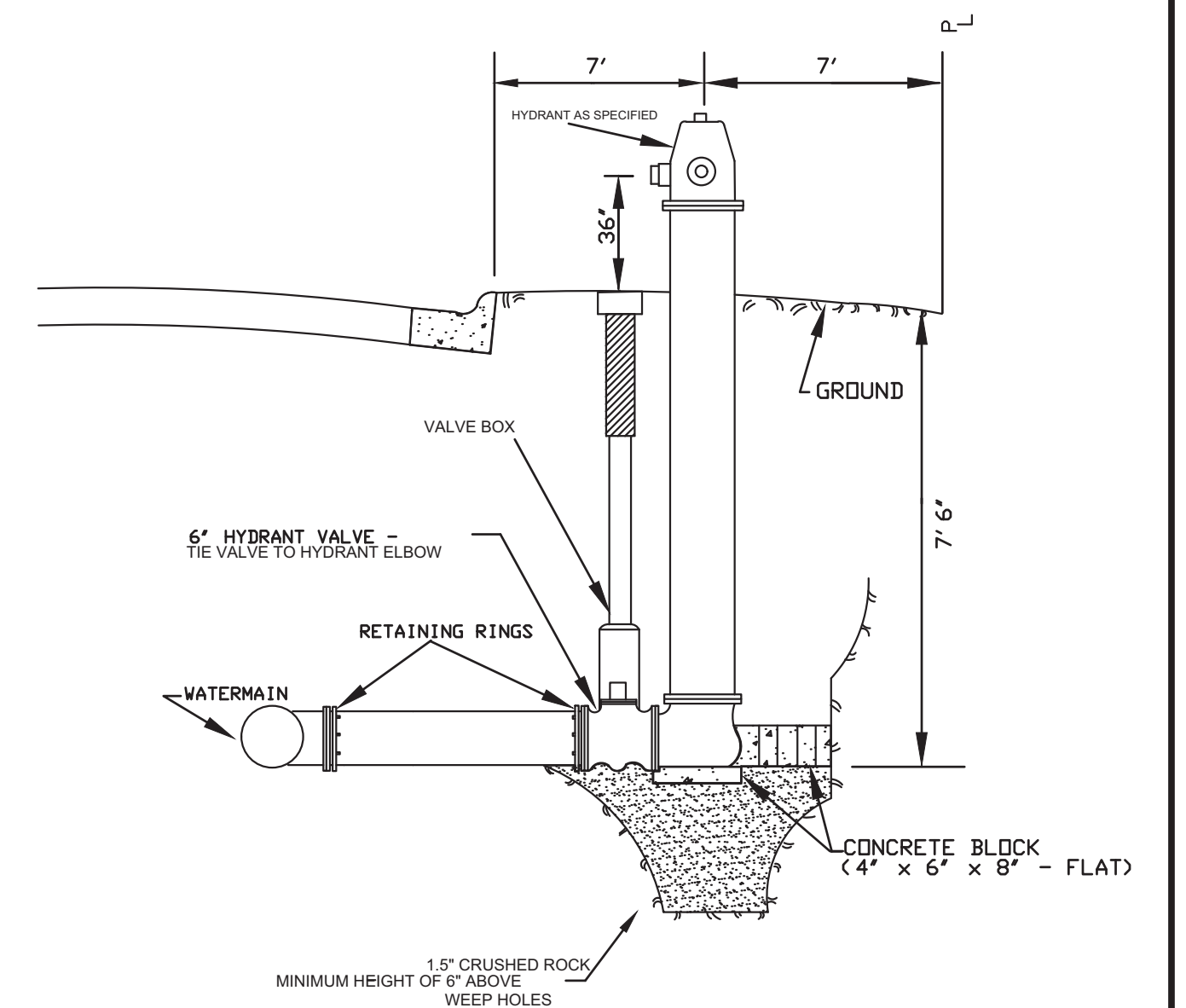
FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
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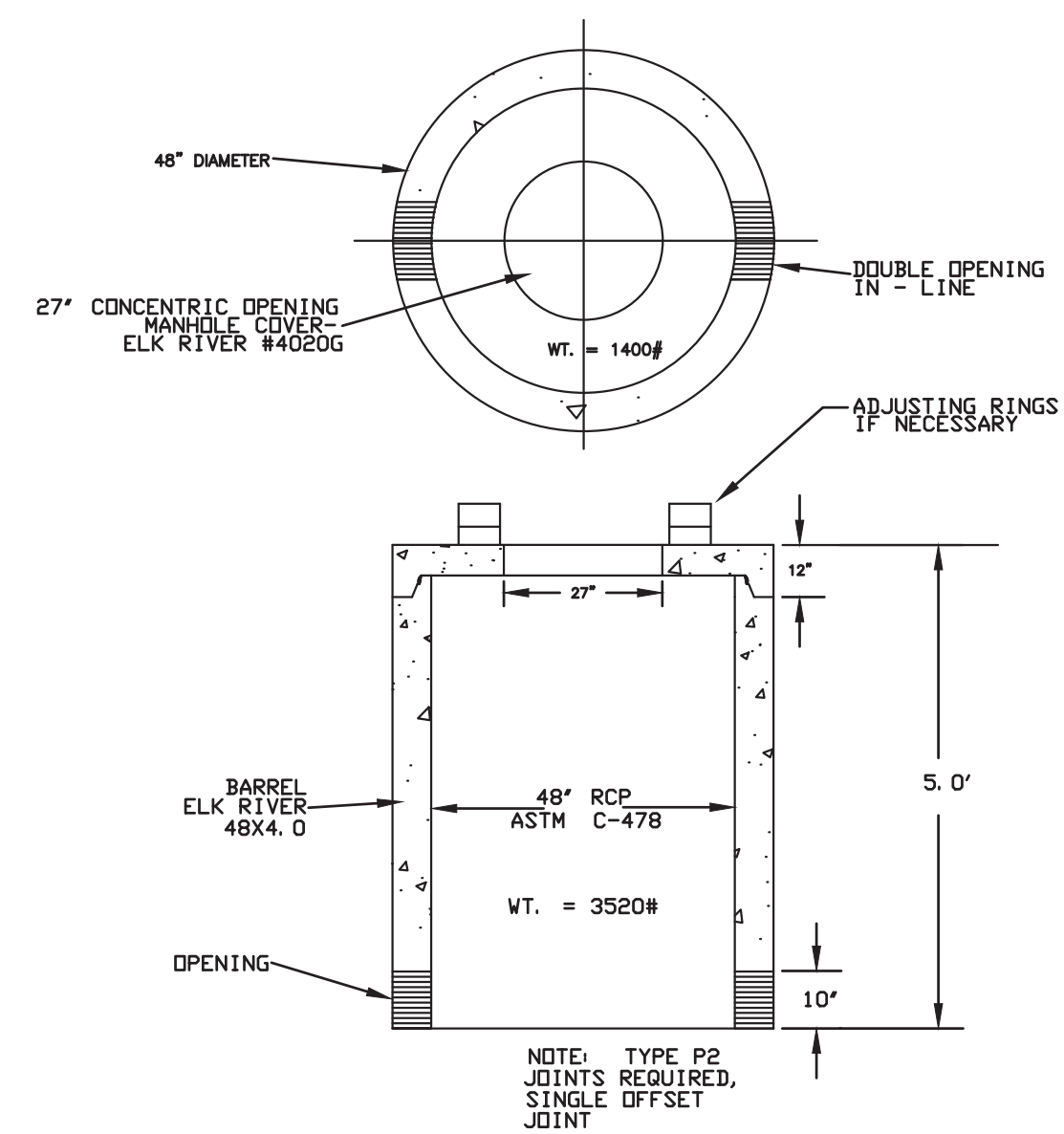
STANDARD BACKFILLING OF WATER MAINS
AND
TRACER WIRE PLACEMENT



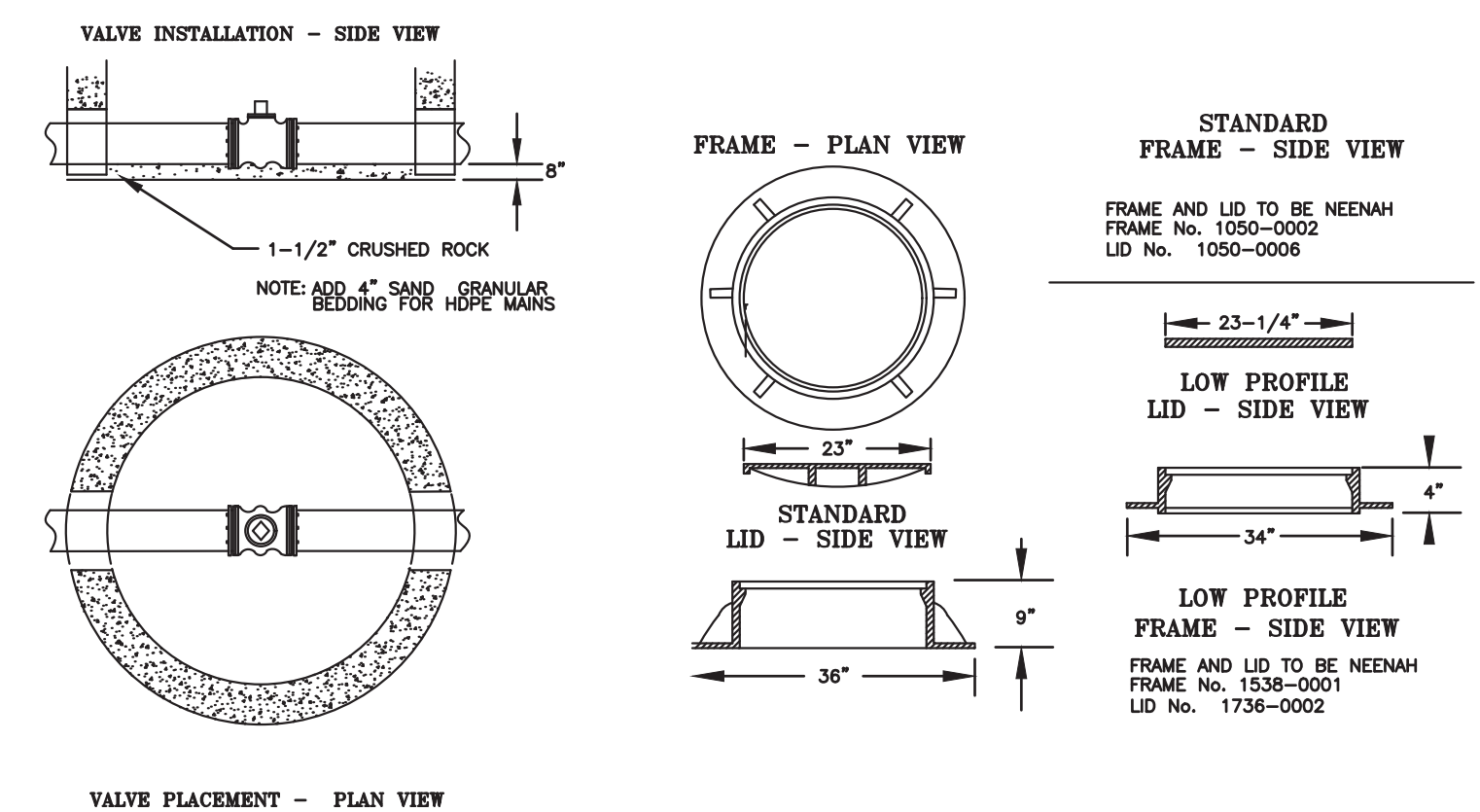
STANDARD HYDRANT DETAIL
(TYPICAL RESIDENTIAL STREET)



STANDARD GATE VALVE MANHOLE



STANDARD VALVE INSTALLATION
AND
MANHOLE COVER ASSEMBLY



NOT TO SCALE

REV.	BY	DATE

JONES HAUGH SMITH
Engineers + Surveyors
415 West North Street Owatonna, MN 56075-4518

DESIGNED: JHS
DRAWN: JHS
CHECKED: BAJ
Date: JULY 2017
DWG: 17-21DESIGN

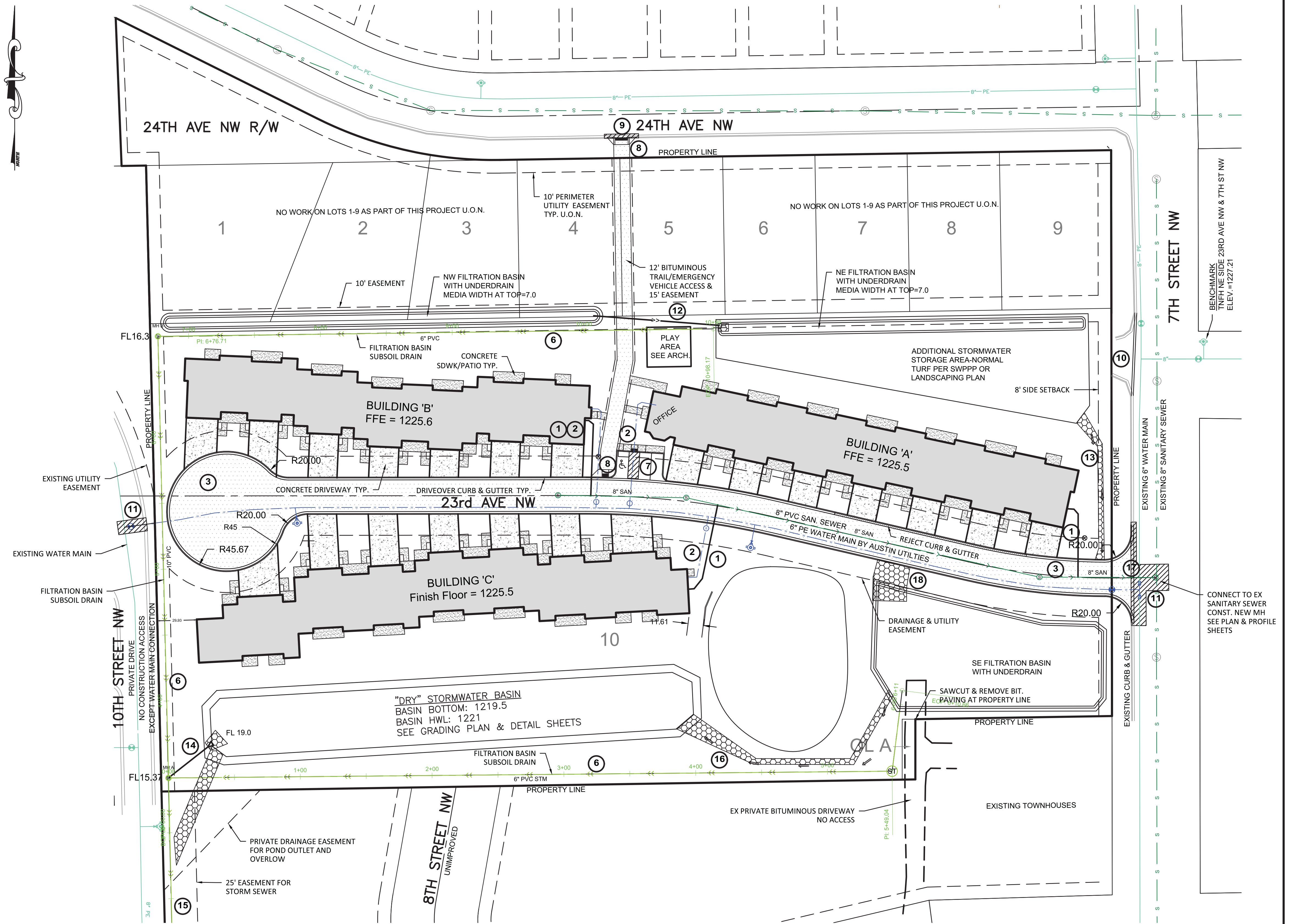
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THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
DETAILS

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LEGEND

- ① 6" PVC SCHED. 40 SEWER SERVICE WITH CLEANOUTS
EXTEND TO WITHIN 5' OF BUILDING COORD. WITH MECH.
- ② 4" PE WATER SERVICE.
CONNECT TO G.V. OR PLUG AT STREET
EXTEND TO WITHIN 5' OF BUILDING COORD. WITH MECH.
- ③ 27' FACE-FACE BITUMINOUS PRIVATE ROAD WITH MNDOT B6-18 CURB & GUTTER
7' PARKING LANE ON NORTH SIDE
NO PARKING ON SOUTH SIDE OR IN CUL-DE-SAC
- ④ NEW 6" PE WATER MAIN BY AUSTIN UTILITIES
SEE PLAN AND PROFILE SHEETS
- ⑤ NEW 8" PVC SDR 35 SEWER MAIN
SEE PLAN AND PROFILE SHEETS
- ⑥ NEW FILTRATION BASIN OUTLET DRAIN
SEE PLAN AND PROFILE SHEETS
- ⑦ BITUMINOUS PARKING AREA FOR OFFICE
SEE DETAILS
- ⑧ CONSTRUCT ADA PED. RAMP WITH FULL WIDTH CAST IRON DOME SECTIONS PER MNDOT STD. PLATE 7038A
- ⑨ SAWCUT & REMOVE BIT. PAVING & CURB & GUTTER TO CONSTRUCT PED. RAMP
REPLACE TO MATCH EXISTING SECTIONS
- ⑩ SAWCUT & REMOVE CURB RADI
CONSTRUCT DRIVEWAY ENTRANCE STYLE CURB & GUTTER
- ⑪ SAWCUT & REMOVE BIT. PAVING & CURB & GUTTER
REPLACE TO MATCH EXISTING SECTIONS
- ⑫ FILTRATION BASIN TRANSFER CULVERT
95'-6" PVC SCHED. 40 CULVERT @ 0.26% WITH CSP APRONS
FL IN 1223.0
FL OUT 1222.75
- ⑬ NE FILTRATION BASIN OVERFLOW SWALE
- ⑭ 37'-12" HDPE POND OUTLET WITH CSP APRON & 10 CY CL 3 RIP RAP & GEOTEXTILE FABRIC @ 0.25%
CONNECT TO MH A
- ⑮ 12" HDPE STORM SEWER OUTLET
SEE PLAN & PROFILE SHEETS
- ⑯ SE FILTRATION BASIN OVERFLOW SWALE
- ⑰ CONST. VALLEY GUTTER
- ⑱ CONST. 80 SY 12" TH. CL 2 RIP RAP SPILLWAY FROM CURB & GUTTER TO 5' INTO FILTRATION BASIN
CONST. 10' WIDE CURB CUT
TOP OF RIP RAP 1" BELOW CURB & GUTTER AT MATCH POINT TO ENSURE STREET DRAINS



REV.	BY	DATE

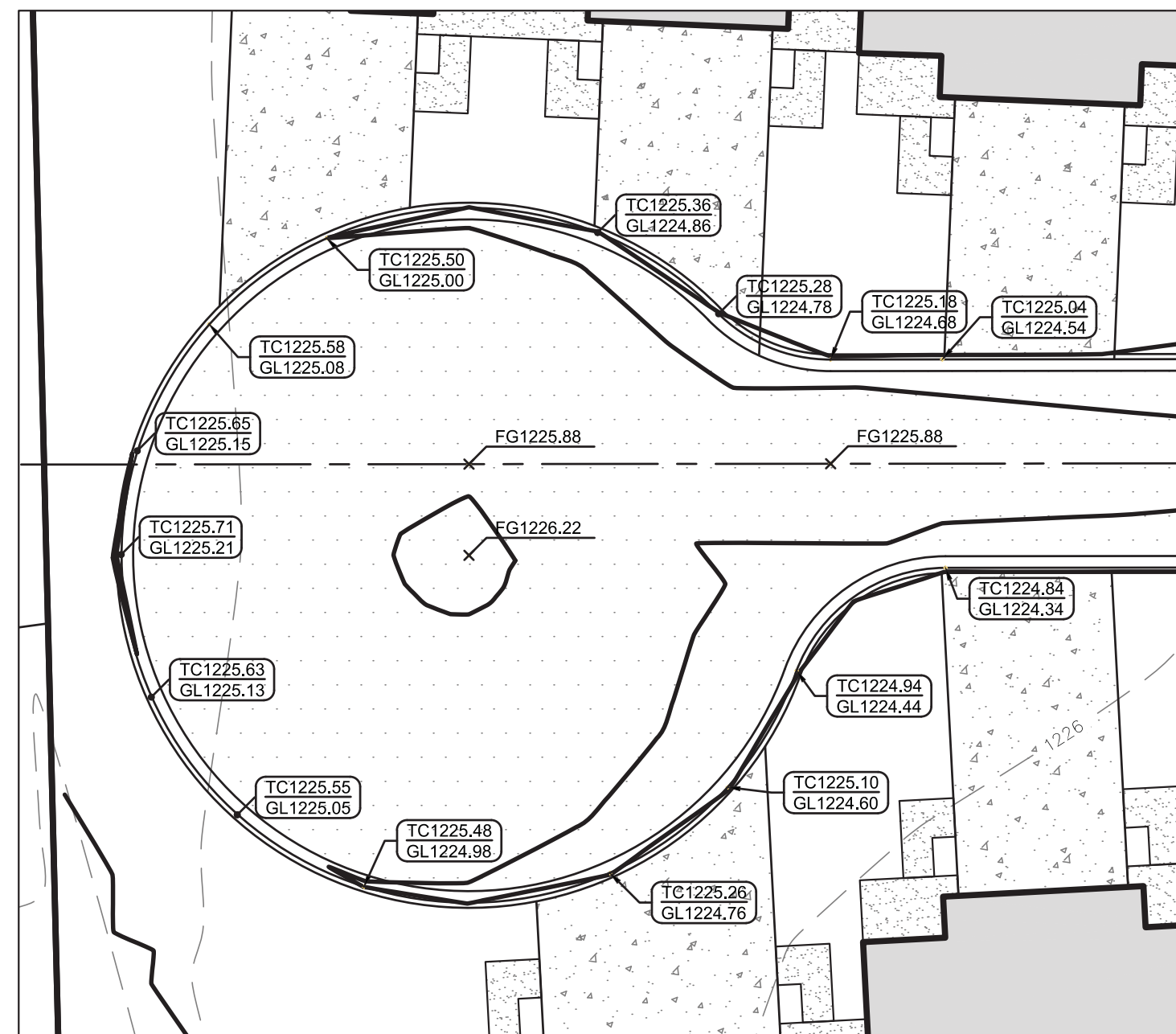
JONES HAUGH SMITH
Engineers + Surveyors
415 West North Street Owatonna, MN 56045-4598

DESIGNED: JHSS
DRAWN: JHSS
CHECKED: BAJ
Date: JULY 2017
DWG: 17-2110ESIGN

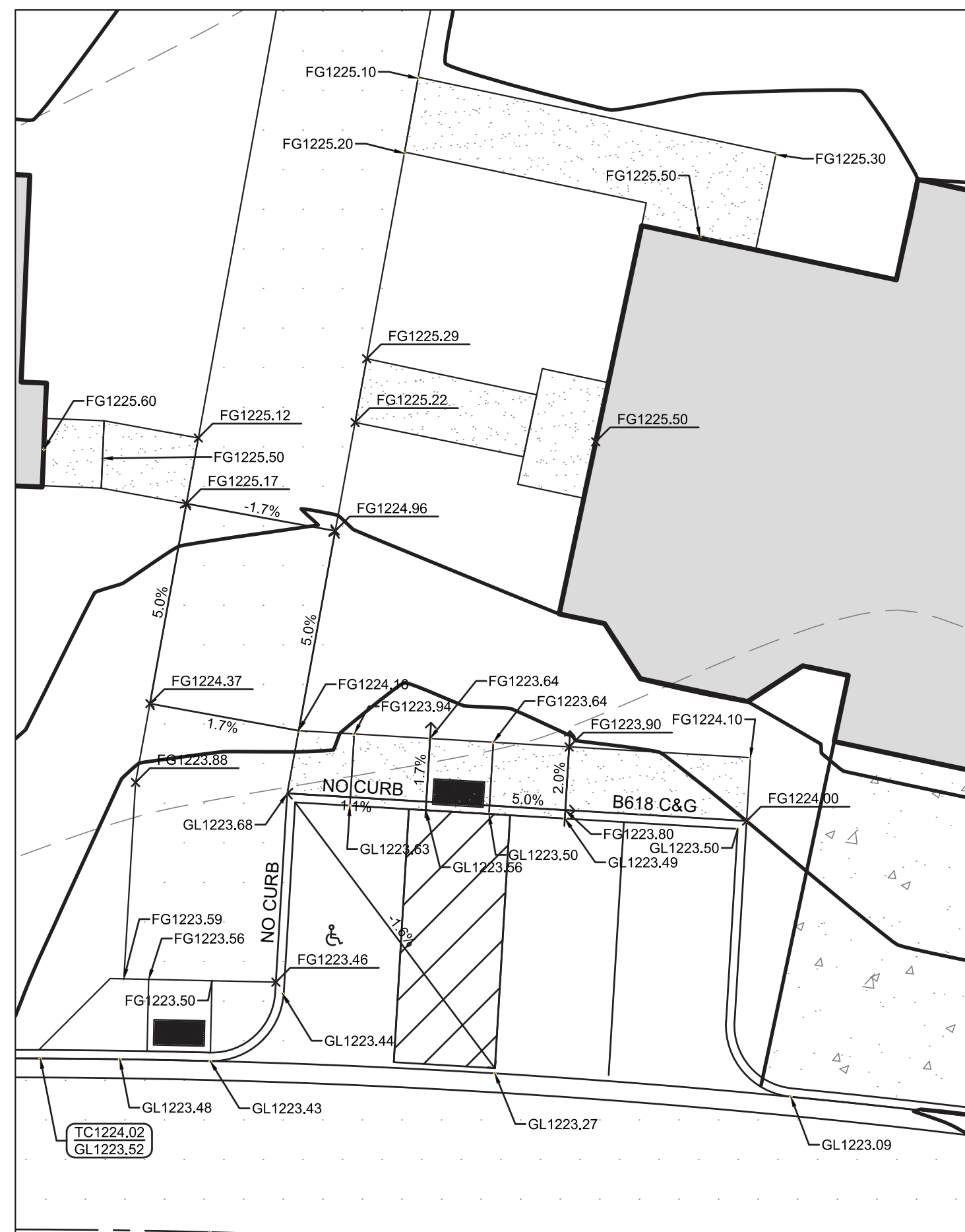
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John H. Schulte V
License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
SITE PLAN

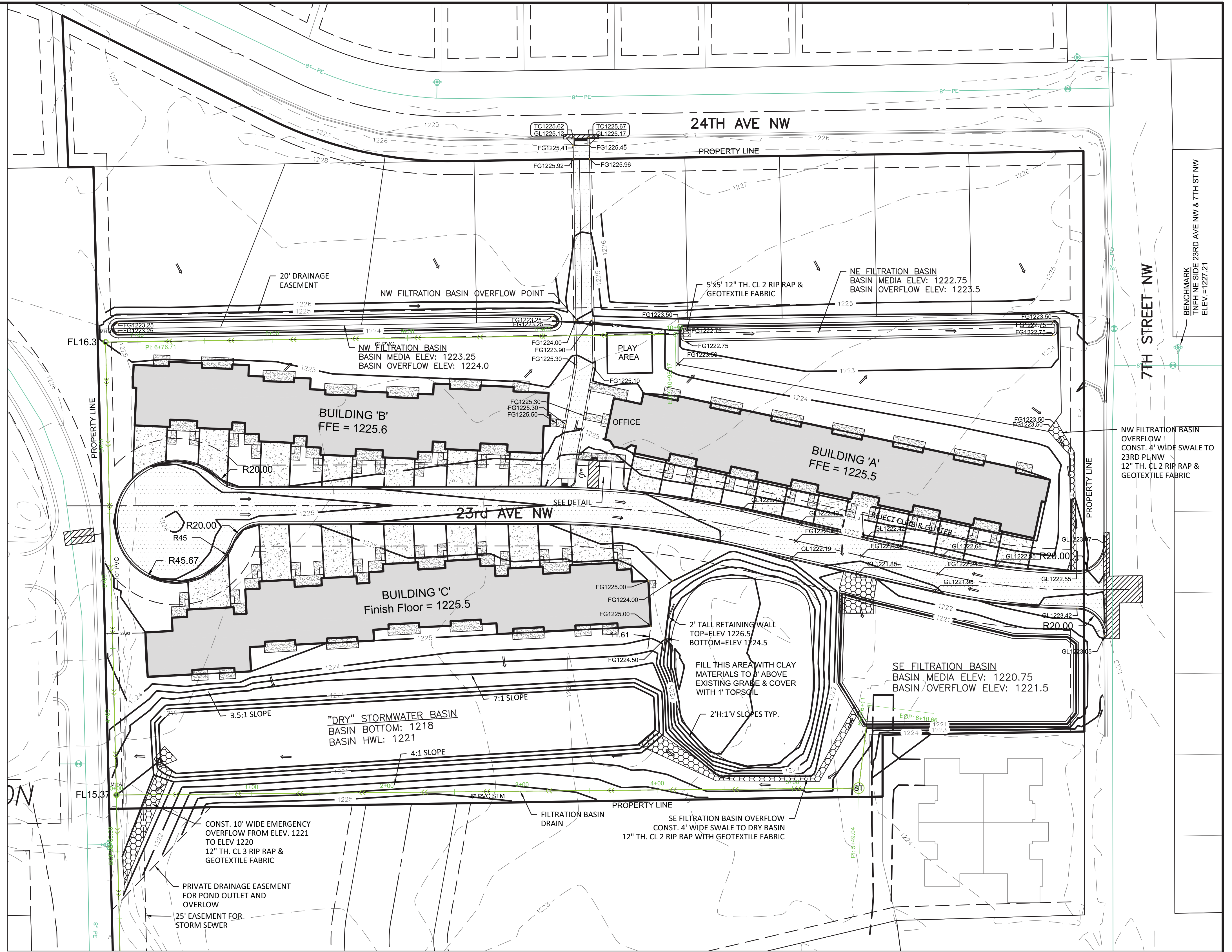
SHEET 10 OF 15



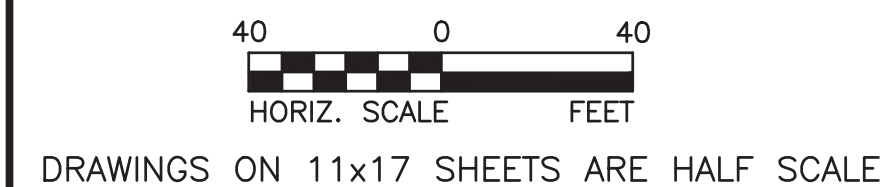
CUL-DE-SAC CURB GRADES
1"=20'



OFFICE ACCESS ADA PARKING GRADING DETAILS
1"=10'



- GENERAL NOTES:
 1. FINISH GRADE ADJACENT TO BUILDING IS MIN. 6" BELOW FFE, EXCEPT AT PAVED AREAS.
 2. FINISH GRADE AT OVERHEAD GARAGE DOORS IS 0.33' BELOW FFE



REV.	BY	DATE

JONES HAUGH SMITH
 Engineers + Surveyors
 415 West North Street Owatonna, MN 507-451-4598

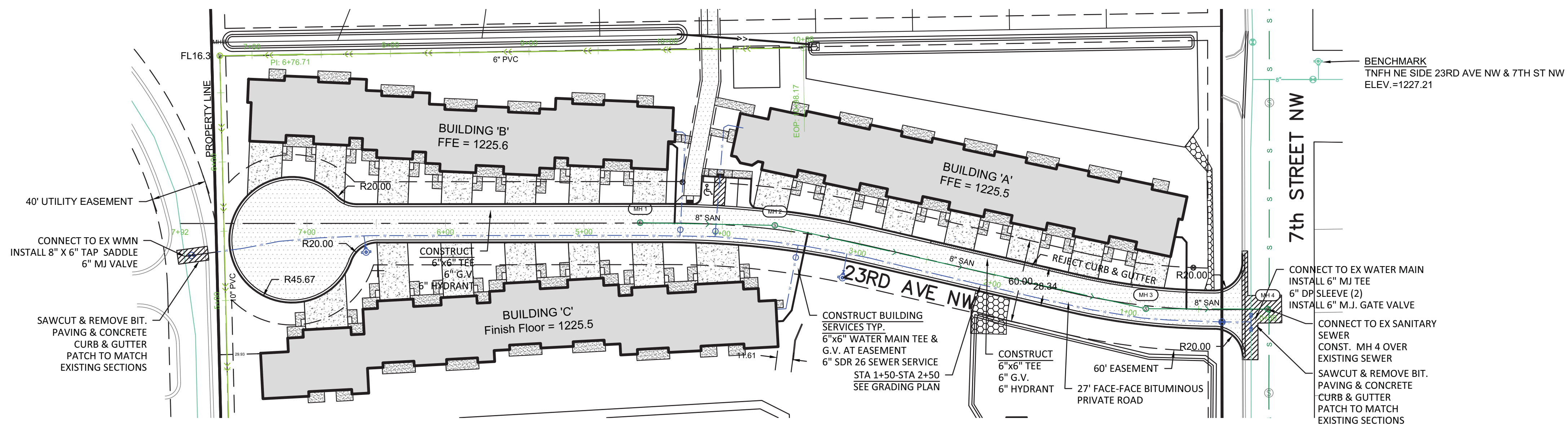
DESIGNED: JHS
 DRAWN: JHS
 CHECKED: BAJ
 Date: 5/16/17
 DWG: 17-078

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 John H. Schulte V
 License No. 44639 Date: 5/16/17

FOX POINTE TOWNHOMES
 THREE RIVERS COMMUNITY ACTION
 2017-2018 CONSTRUCTION
 GRADING PLAN

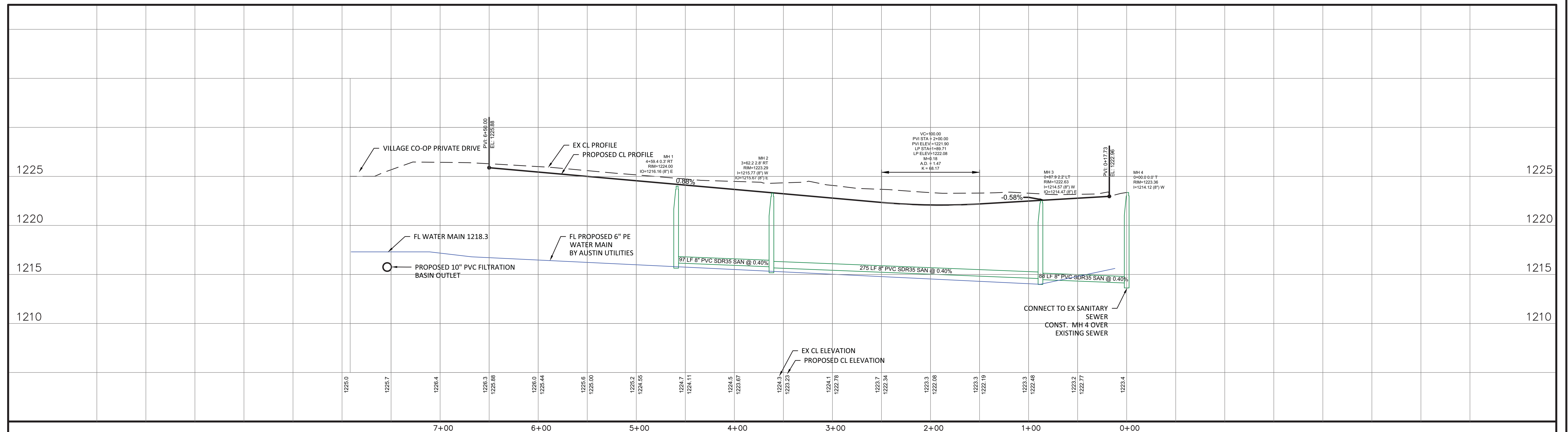
SHEET 11 OF 15

23RD AVE NW



- NOTES:**
1. ALL CURB RADII ARE DIMENSIONED TO BACK OF CURB. ALL STREET DIMENSIONS ARE TO FACE OF CURB.
 2. ALL BITUMINOUS MATCH POINTS TO EXISTING INPLACE BITUMINOUS SHALL BE CLEANLY SAW CUT FULL DEPTH.
 3. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER TO RELOCATE PRIVATE UTILITIES AS NECESSARY TO CONSTRUCT STREETS AND UTILITIES.

PROPOSED CONSTRUCTION



REV.	BY	DATE

JONES HAUGH SMITH
 Engineers + Surveyors
 415 West North Street Owatonna, MN 507-451-4598

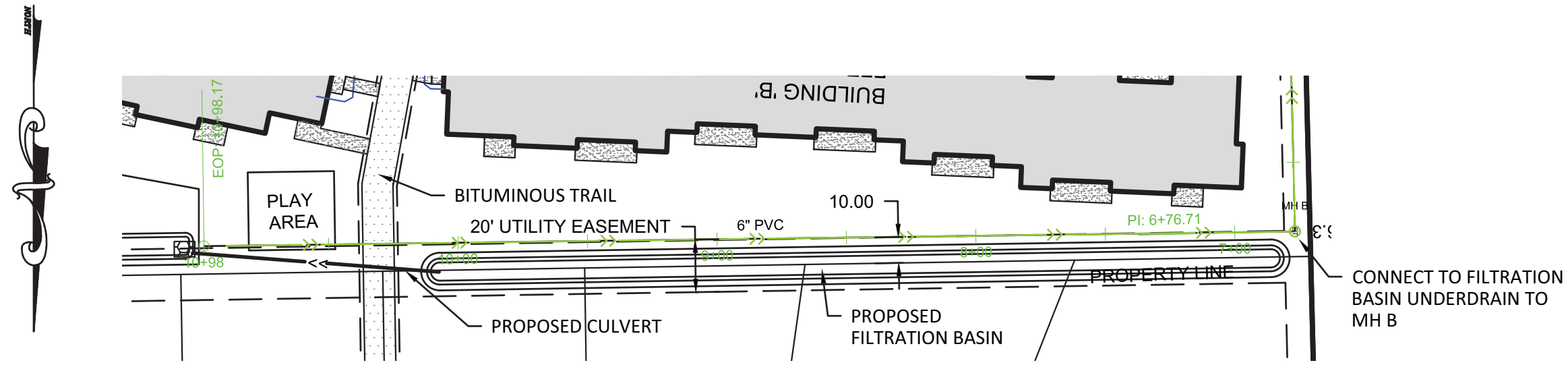
DESIGNED: JHS
 DRAWN: JHS
 CHECKED: BJW
 DATE: JULY 2017
 FILE NO: 17-211

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 John H. Schulte V
 License No. 44639 Date: 8/17/17

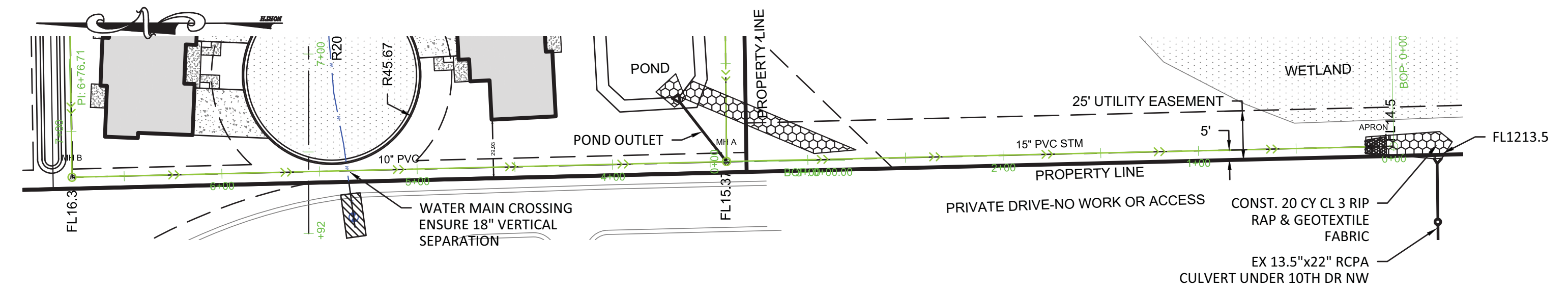
FOX POINTE TOWNHOMES
 THREE RIVERS COMMUNITY ACTION
 2017-2018 CONSTRUCTION
 23RD AVE NW - PLAN AND PROFILE

SHEET 12 OF 15

FILTRATION BASINS OUTLET

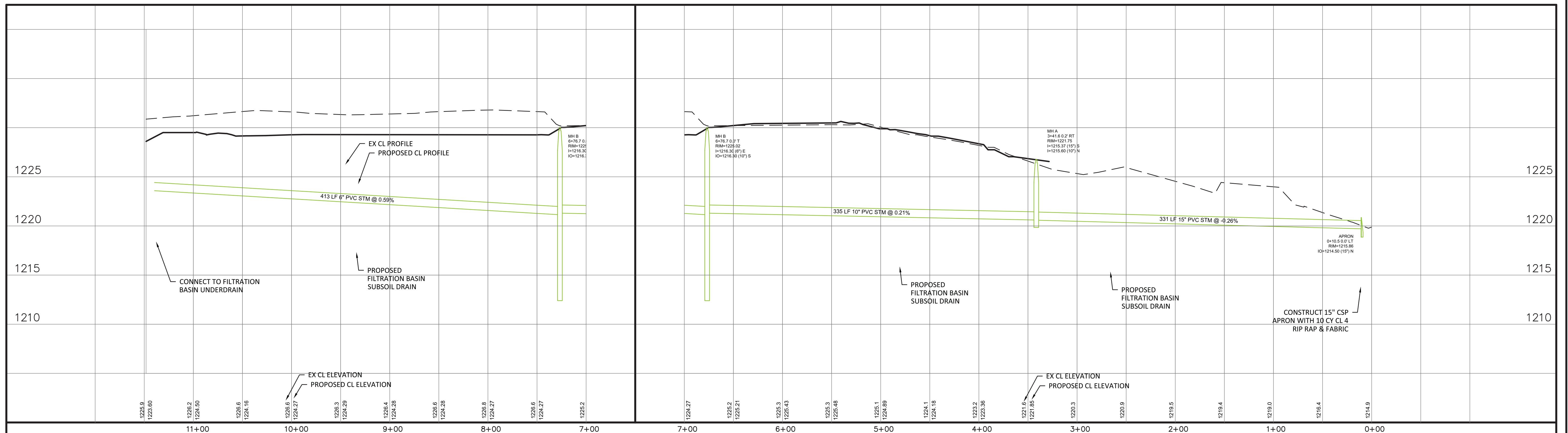


POND + FILTRATION BASINS OUTLET



- NOTES:**
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 2. ALL BITUMINOUS MATCH POINTS TO EXISTING INPLACE BITUMINOUS SHALL BE CLEANLY SAW CUT FULL DEPTH.
 3. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER TO RELOCATE PRIVATE UTILITIES AS NECESSARY TO CONSTRUCT STREETS AND UTILITIES.

PROPOSED CONSTRUCTION



REV.	BY	DATE

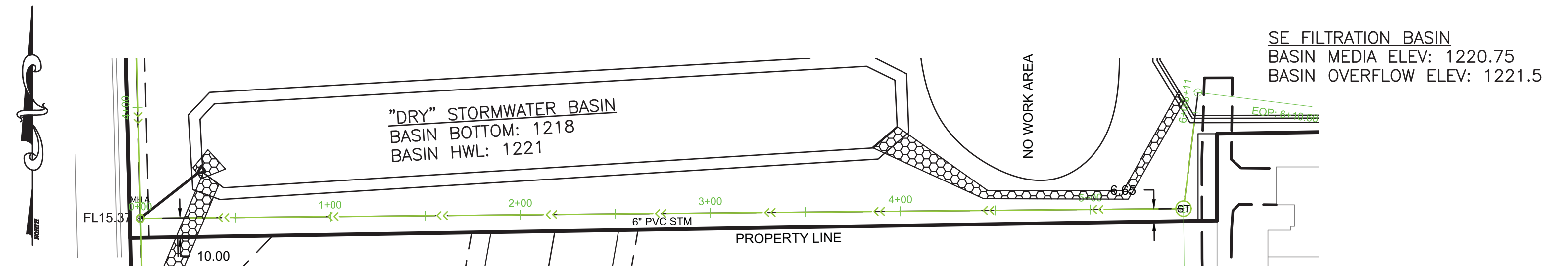
JONES HAUGH SMITH
 Engineers + Surveyors
 415 West North Street Owatonna, MN 507-451-4598

DESIGNED: JHSS
 DRAWN: JHSS
 CHECKED: BWJ
 DATE: JULY 2017
 FILE NO: 17-211

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 John H. Schulte V
 License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
 THREE RIVERS COMMUNITY ACTION
 2017-2018 CONSTRUCTION
 FILTRATION BASIN DRAIN

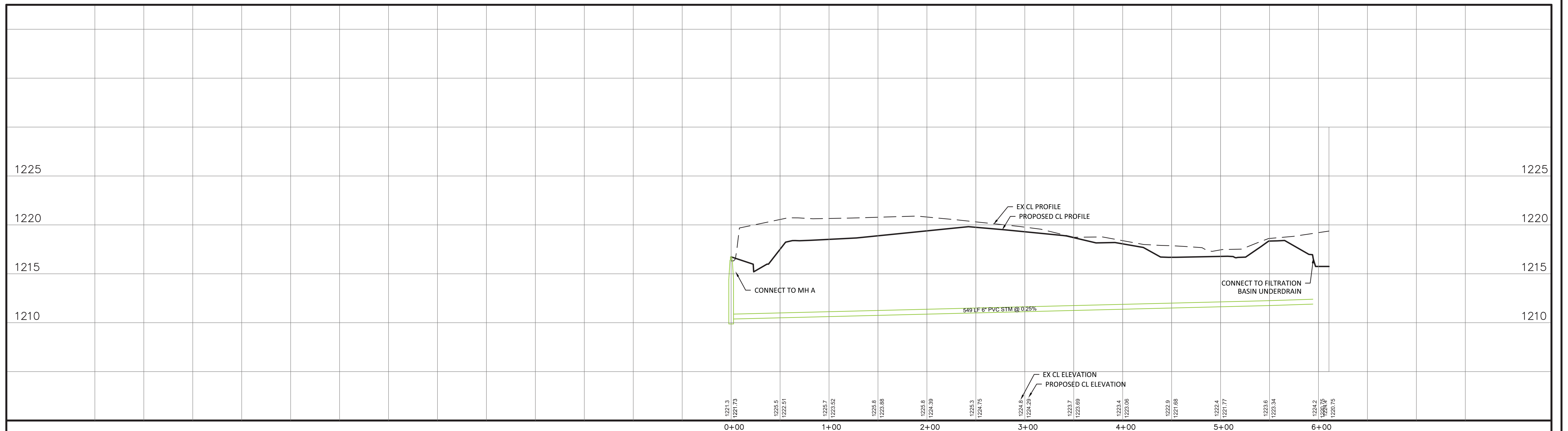
SE FILTRATION BASIN OUTLET



NOTES:

1. ALL CURB RADII ARE DIMENSIONED TO BACK OF CURB. ALL STREET DIMENSIONS ARE TO FACE OF CURB.
2. ALL BITUMINOUS MATCH POINTS TO EXISTING INPLACE BITUMINOUS SHALL BE CLEANLY SAW CUT FULL DEPTH.
3. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER TO RELOCATE PRIVATE UTILITIES AS NECESSARY TO CONSTRUCT STREETS AND UTILITIES.

PROPOSED CONSTRUCTION



REV.	BY	DATE


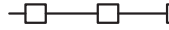
JONES HAUGH SMITH
Engineers + Surveyors
415 West North Street Owatonna, MN 507-451-4598

DESIGNED: *JHSS*
DRAWN: *JHSS*
CHECKED: *BJW*
DATE: JULY 2017
FILE NO: 17-211

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John H. Schulte V
John H. Schulte V
License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES THREE RIVERS COMMUNITY ACTION 2017-2018 CONSTRUCTION SE FILTRATION BASIN OUTLET	SHEET 14 OF 15
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LEGEND

-  CONSTRUCTION ENTRANCE
-  SILT FENCE - MACHINE SLICED

SWPPP GENERAL NOTE

THIS PLAN IS MEANT AND PROVIDED AS A GUIDE IN THE PROVISION OF SEDIMENT AND EROSION CONTROL (ESC) BMP'S AS REQUIRED BY THE NPDES PERMIT. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES, ALTHOUGH NOT SHOWN HERE, MAY BE REQUIRED TO COMPLY WITH THE PROVISIONS OF THE PERMIT. PROVISION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMP'S IN ACCORDANCE WITH THE NPDES PERMIT IS THE RESPONSIBILITY OF THE CONTRACTOR, REGARDLESS OF WHAT IS SHOWN ON THIS PLAN. MAINTENANCE OF ESC BMP'S IS INCIDENTAL TO THE UNIT PRICE BID. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADDITIONAL EROSION CONTROL BMP'S AS REQUIRED BY THE NPDES PERMIT. THE ESC BMP'S SHOWN ON THIS PLAN ARE BASED ON FINISH GRADE CONTOURS. INTERIM BMP'S AS REQUIRED BY THE NPDES PERMIT AND SWPPP NARRATIVE ARE THE RESPONSIBILITY OF THE CONTRACTOR.

EARTHWORK NOTES:

1. CONTRACTOR TO FURNISH ON SITE GEOTECHNICAL CONSULTING ENGINEER AS REQUIRED.
2. SOIL CORRECTIONS UNDER THE PROPOSED CONCRETE & ASPHALTIC PAVEMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, REMOVAL OF ALL TOPSOIL AND VISIBLY ORGANIC FILL MATERIAL.
3. CONTRACTOR TO FURNISH ON SITE GEOTECHNICAL CONSULTING ENGINEER TO COORDINATE SOIL CORRECTIONS UNDER PAVEMENTS.
4. THE SITE SHALL BE GRADED TO THE CONTOURS SHOWN AND TO PROVIDE THE DRAINAGE PATTERN SHOWN.
5. GRADE ALL AREAS TO DRAIN.

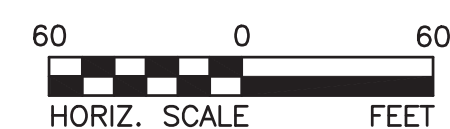
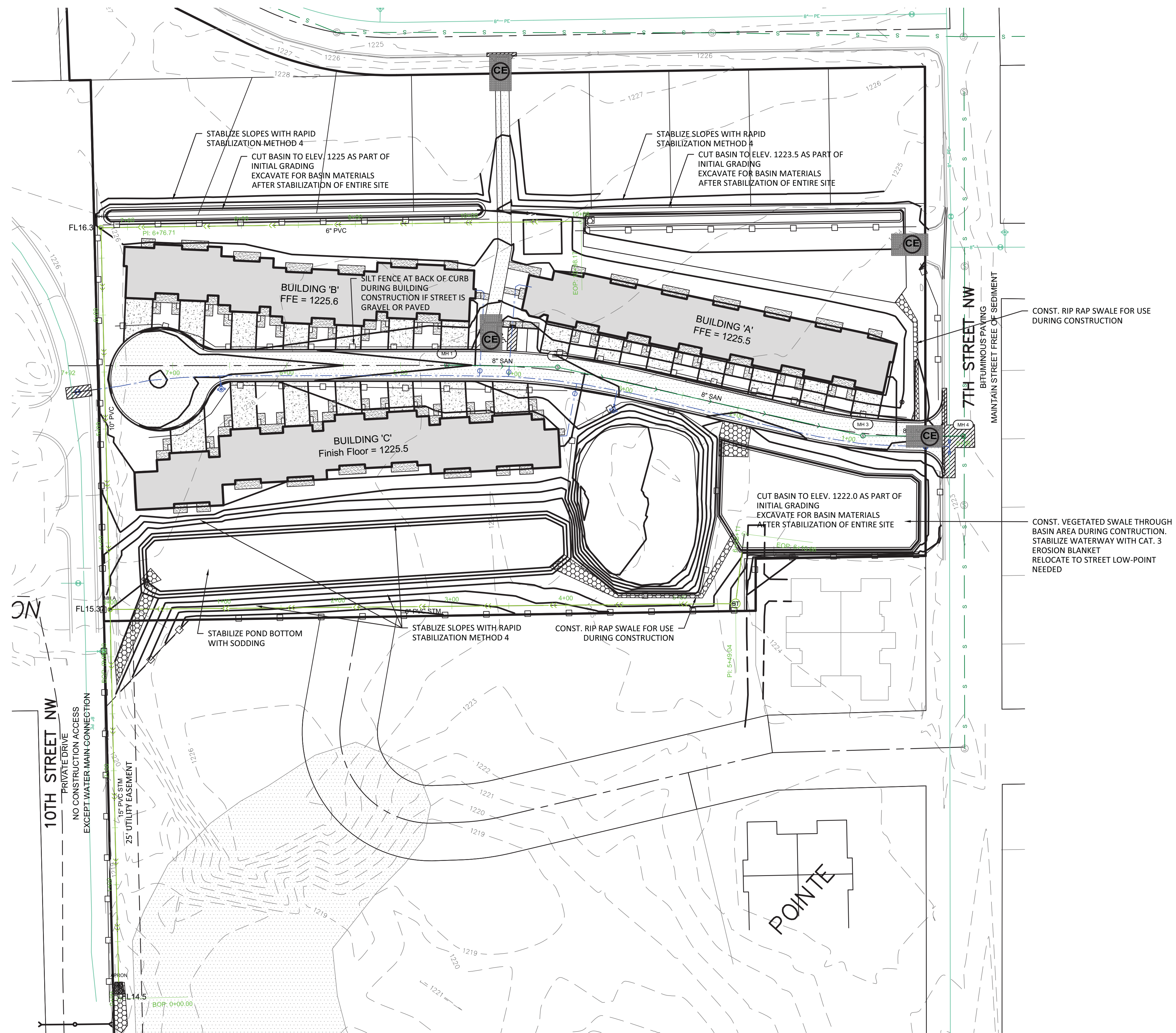
TURF ESTABLISHMENT

1. PROVIDE A MINIMUM OF 6" OF TOPSOIL OVER ALL AREAS DESIGNATED TO RECEIVE TURF.
2. STABILIZE ALL OTHER DISTURBED AREAS OF THE SITE NOT SHOWN TO RECEIVE SPECIAL TREATMENT ON THIS PLAN IN ACCORDANCE WITH THE LANDSCAPE PLAN OF IF NOT SHOWN, WITH HYDROSEED MIXTURE AS MNDOT RAPID STABILIZATION METHOD 3 WITH:
SEED MIX 260 @ 100 LB/ACRE,
FERTILIZER 22-5-10 @ 300 LBS/ACRE
TYPE 1 HYDRAULIC SOIL STABILIZER

WINTER STABILIZATION

IN THE EVENT THAT FINAL STABILIZATION OF THE SITE HAS NOT OCCURRED PRIOR TO WINTER CONDITIONS, THE FOLLOWING ACTIVITIES WILL OCCUR:

1. STABILIZE ALL AREAS DESIGNATED TO RECEIVE TURF WITH SODDING OR SEED MIX 22-11-12 @ 40 LB/ACRE WITH SEED MIX 21-11-2 (WINTER WHEAT) @ 100 LB/ACRE, AND TYPE 1 MULCH FROZEN TO GROUND WITH WATER
2. SPOT CHECK AND STABILIZE ALL AREAS ALREADY STABILIZED WITH THE ABOVE
3. PERFORM MONTHLY INSPECTIONS TO EVALUATE ON-GOING EFFECTIVENESS OF INSTALLED MEASURES
4. AT SPRING THAW, SPOT CHECK AND STABILIZE ALL AREAS PER THE METHOD IN NO. 1 ABOVE, INSPECT ALL ESC BMP'S AND REPLACE OR REPAIR AS NEEDED, RESUME TYPICAL MAINTENANCE SCHEDULE



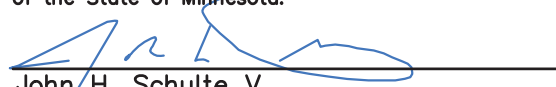
DRAWINGS ON 11x17 SHEETS ARE HALF SCALE

REV.	BY	DATE



415 West North Street Owatonna, MN 56045-4598

DESIGNED:	JHS5
DRAWN:	JHS5
CHECKED:	BU
Date:	JULY 2017
DWG:	17-210DESIGN

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

John H. Schulte V
License No. 44639 Date: 8/17/17

FOX POINTE TOWNHOMES
THREE RIVERS COMMUNITY ACTION
2017-2018 CONSTRUCTION
SWPPP

SHEET
15
OF
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