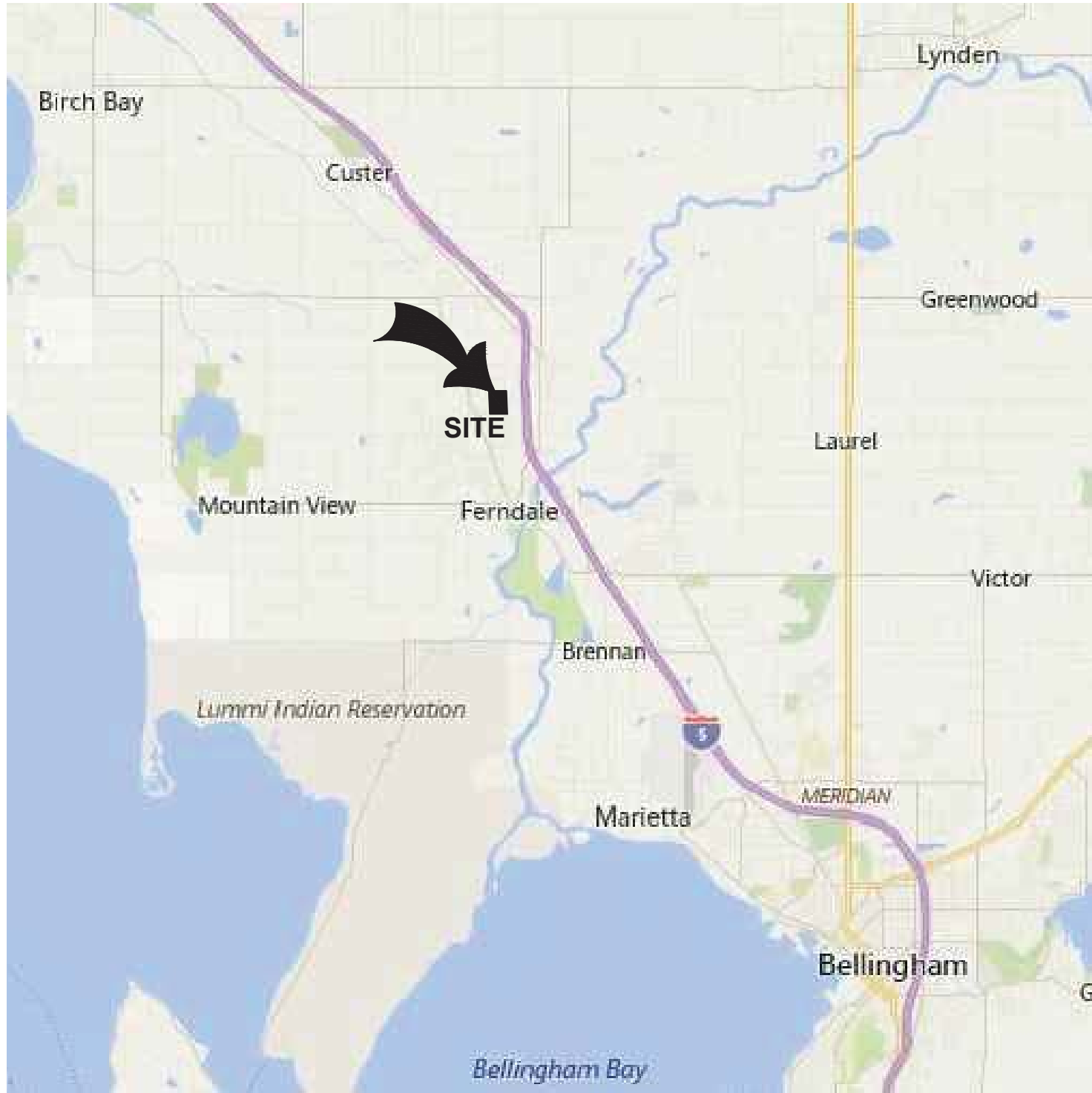


CITY OF FERNDALE / WHATCOM COUNTY
SECTION 18, TOWNSHIP 39 NORTH, RANGE 2 EAST OF W.M.



LEGEND		
EXISTING	PROPOSED	
		MAJOR CONTOUR
		MINOR CONTOUR
		CENTER LINE
		WATER LINE
		WATER SERVICE
		FIRE HYDRANT
		WATER METER
		SEWER LINE
		FORCE MAIN
		SEWER SERVICE
		SEWER MANHOLE
		SEWER CLEANOUT
		STORM LINE
		STORM CULVERT
		STORM SERVICE
		STORM DRAIN CATCH BASIN
		BACK OF WALK DRAIN
		LOT DRAIN
		STORM DRAIN CLEANOUT
		LOT DRAIN
		UNDERGROUND POWER
		STREET LIGHT

ABBREVIATIONS	
CBI	CATCH BASIN INSERT
DI	DUCTILE IRON
E	EASTING
EG	EXISTING GROUND
ELEV	ELEVATION
EXST	EXISTING
FG	FINISHED GRADE
FF	FINISH FLOOR
FT	FEET
IE	INVERT ELEVATION
L	LEFT
LF	LENGTH FEET
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTHING
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
PVC	POLYVINYLCHLORIDE
R	RIGHT
SDCB	STORM DRAIN CATCH BASIN
SSCO	SEWER CLEANOUT
SSMH	SEWER MANHOLE
STA	STATION
TB	THRUST BLOCK
TYP	TYPICAL

MALLOY TERRACE PUD PHASE 2 CONSTRUCTION PLANS

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C32	SEWER DETAILS
C33	WATER DETAILS

PROJECT CONTACT INFORMATION

OWNER

Jim LeBlonde - (360) 715-3277
P.O. Box 28576
Bellingham, WA 98228

ENGINEER OF RECORD

Cascade Engineering Group, PS, Inc.
Craig Parkinson, P.E. - (360) 306-8161
119 Grand Avenue, Suite D
Bellingham, WA 98225

CONTRACTOR

Dirt Works, Inc.
Jim LeBlonde - (360) 715-3277
P.O. Box 28576
Bellingham, WA 98228

SURVEYOR

Construction Surveyors North Central Washington
Chris Eden, PLS - (509) 881-8315
854 N. Manchester Place
East Wenatchee, WA 98802

RECORD DRAWING 06/05/2020

FERNDAL, WASHINGTON

MALLOY TERRACE PUD
PHASE 2 CONSTRUCTION
COVER SHEET, INDEX, LEGEND, VICINITY MAP



REVISIONS DATE

DATE: 05/07/2020
DESIGN:
DRAWN: LCP
CHECKED:

SCALE: AS SHOWN

PROJECT NUMBER:

MDGX0001

SHEET NO.

C1

OF

ENGINEER'S CERTIFICATION:
"I HEREBY CERTIFY THAT THE IMPROVEMENTS OF MALLOY TERRACE PHASE 2
HAVE BEEN INSPECTED BY CASCADE ENGINEERING GROUP, AND HAVE BEEN
CONSTRUCTED IN GENERAL CONFORMANCE WITH THE PLANS APPROVED BY
THE PUBLIC WORKS DIRECTOR FOR SAID DEVELOPMENT, AND THE GENERAL
SPECIFICATIONS ADOPTED BY THE CITY OF FERNDALE DEPARTMENT OF PUBLIC
WORKS."

CRAIG R. PARKINSON, P.E.

JUNE 5, 2020
DATE



06/02/2020 11:06AM P:\MMDGX0001\0400CAD\DWG\Sheets\PHASE 2 CONSTRUCTION PLANS\Record Drawings\CO2-GENERAL NOTES\PH2-REC.dwg

GENERAL REQUIREMENTS:

1.

ALL WORK AND MATERIALS SHALL CONFORM TO THESE PLANS AND TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE "STATE OF WASHINGTON, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, AND ITS AMENDMENTS" (WSDOT SPECS.) AND STANDARD PLANS, THE CITY OF FERNDAL EVELOPMENT STANDARDS (COFDS) AND THE 2005 VERSION OF THE DEPARTMENT OF ECOLOGY STORM WATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (DOE MANUAL). IN CASE OF A CONFLICT BETWEEN PLANS, REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.

2.

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER CONSTRUCTION DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES. THROUGHOUT THE PERIOD OF CONSTRUCTION, CONTRACTOR SHALL COMPLY WITH THE TERMS OF ALL PERMITS.

3.

THE CONTRACTOR MUST HAVE A FULL SET OF CITY CONTRACT DOCUMENTS ON THE SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

4.

CONSTRUCTION NOISE SHALL BE LIMITED TO BETWEEN 7 a.m. TO 8 p.m., MONDAY THROUGH FRIDAY. WEEKEND WORK REQUIRING INSPECTION MUST BE APPROVED BY PUBLIC WORKS. REQUESTS WILL BE MADE A WEEK IN ADVANCE.

5.

THE CONTRACTOR SHALL CONTACT THE UTILITIES UNDERGROUND LOCATION CENTER AT LEAST 72 HOURS PRIOR TO STARTING CONSTRUCTION. PHONE: 1-800-424-5555. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL OF THE VARIOUS UTILITY COMPANIES TO ARRANGE FOR FIELD LOCATIONS OF ALL EXISTING UTILITY FACILITIES. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR COSTS INCURRED BECAUSE OF DAMAGE DONE TO EXISTING FACILITIES BY THE CONTRACTOR'S WORK FORCE, INCLUDING COSTS FOR REPAIRS, WHICH WILL BE CONTRACTOR'S SOLE RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EXISTING UTILITIES AND TO NOTIFY THE PROJECT ENGINEER OF RECORD (ENGINEER) PROMPTLY OF ANY CONFLICT BETWEEN THE APPROVED PLANS AND THE LOCATION OF ANY EXISTING UTILITIES.

6.

THE CONTRACTOR SHALL PROTECT ALL PRIVATE AND PUBLIC UTILITIES FROM DAMAGE RESULTING FROM THE WORK. CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISRUPTED BY THE PROJECT IMMEDIATELY AFTER CONSTRUCTION.

7.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CLEARING OR GRADING IN CONFORMANCE WITH THE EROSION & SEDIMENTATION CONTROL PLAN AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP SHALL BE ONSITE AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.

8.

SITE CLEARING SHALL INCLUDE THE LOCATION AND REMOVAL OF ALL ABOVE GROUND AND BURIED DEBRIS AND WASTE THAT MAY BE PRESENT.

9.

THE CONTRACTOR SHALL OBTAIN REVOCABLE ENCROACHMENT PERMITS FROM THE CITY OF FERNDAL E AND/OR WHATCOM COUNTY PRIOR TO COMMENCING WORK WITHIN THE PUBLIC RIGHT-OF-WAY.

10.

THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH REPRESENTATIVES OF THE CITY OF FERNDAL E PUBLIC WORKS DEPARTMENT AND THE ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. THE CITY WILL SCHEDULE THE MEETING.

11.

ALL WORK AND MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE CITY OF FERNDAL E PUBLIC WORKS DEPARTMENT, REPRESENTATIVES FROM THE CITY OF FERNDAL E PUBLIC WORKS DEPARTMENT MUST INSPECT ALL WORK IDENTIFIED ON THE PLANS, BOTH PUBLIC AND PRIVATE. THE CONTRACTOR SHALL CALL AT LEAST 24 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS AS FOLLOW:

A.

PLACEMENT OF TEMPORARY EROSION CONTROL MEASURES.

B.

CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.

C.

PLACEMENT OF WATER MAIN AND BACKFILLING OF WATER MAIN TRENCH WITHIN ROAD RIGHTS OF WAY OR IN WATERLINE EASEMENT TO BE DEDICATED TO THE CITY OF FERNDAL E.

D.

PLACING OR BACKFILLING OF UNDERGROUND UTILITIES, STORM SEWER AND SANITARY SEWER WITHIN ROAD RIGHTS-OF-WAY, IN EASEMENTS TO BE DEDICATED TO THE CITY OF FERNDAL E, OR OTHER PUBLICLY SHARED FACILITIES.

E.

GRADING OF PUBLIC OR PRIVATE ROADWAY AT:

1.

COMPLETION OF EXCAVATION TO SUBGRADE.

2.

COMPLETION OF BALLAST COURSE PLACEMENT

3.

COMPLETION OF CRUSHED SURFACING COURSE PLACEMENT

F.

POURING OF CURB AND GUTTER AND SIDEWALK IN PUBLIC ROADWAY.

G.

ASPHALT PAVING IN PROGRESS IN PUBLIC ROADWAY.

H.

OVERALL INSPECTION FOR FINISHED SHOULDERS, DITCHES, PERMANENT SEEDING AND MONUMENT PLACEMENT.

I.

END OF MAINTENANCE PERIOD

12.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO PERFORMING THE WORK. ALL SECTIONS OF THE WSDOT SPECS., 1-07.23- TRAFFIC CONTROL, SHALL APPLY.

13.

THE CONTRACTOR SHALL INFORM THE ENGINEER AND OBTAIN APPROVAL FROM THE CITY OF FERNDAL E PUBLIC WORKS DIRECTOR OF ANY PROPOSED DEVIATION FROM THE APPROVED PLANS PRIOR TO CONSTRUCTION OF THE REVISED IMPROVEMENTS. THE CONTRACTOR SHALL KEEP RECORDS OF ALL DEVIATIONS AND SHALL FORWARD THEM TO THE ENGINEER AND TO THE CITY OF FERNDAL E PUBLIC WORKS DEPARTMENT.

14.

AS-BUILT DATA SHALL BE PROVIDED TO THE CITY OF FERNDAL E UPON COMPLETION OF CONSTRUCTION AND PROVIDED IN CITY OF FERNDAL E DATUM - VERTICAL (NGVD 29) AND HORIZONTAL (NAD 83/91). CONTACT THE CITY FOR MORE INFORMATION ON SUBMITTAL REQUIREMENTS.

15.

POTHOLING ALL EXISTING UTILITIES IS REQUIRED PRIOR TO CONSTRUCTION TO VERIFY DESIGN FEASIBILITY. THE CITY DOES NOT GUARANTEE AS-BUILT INFORMATION IN THE CITY DATA BASE IS ACCURATE AND WILL NOT BE HELD RESPONSIBLE IF FIELD MODIFICATIONS ARE REQUIRED BECAUSE POTHOLING WAS NOT DONE PRIOR TO DESIGN.
- UNDERGROUND UTILITIES CONSTRUCTION:
1.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE ENGINEER TO ASSURE ACCURATE AND TIMELY COLLECTION OF ALL REQUIRED AS-BUILT DATA. THIS DATA MUST ACCURATELY REFLECT THE LOCATIONS OF ALL UNDERGROUND UTILITIES, BOTTOM OF PIPE ELEVATIONS, INVERT ELEVATIONS, MANHOLE LOCATIONS, WATER SERVICE TAPS, BLOW-OFF LOCATIONS AND INVERTS OF SERVICE CONNECTIONS (BOTH AT PIPE AND AT PROPERTY LINE). VERTICAL AND HORIZONTAL BENDS, SERVICE BOXES AND METERS, VALVES AND HYDRANTS. CALL THE ENGINEER AT LEAST 48-HOURS BEFORE BURYING UNDERGROUND PIPE TO ASSURE AND FACILITATE REQUIRED AS-BUILT SURVEY.

2.

THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE SUBJECT TO THE FOLLOWING CRITERIA:

A.

NO MORE THAN 500 FEET OF TRENCH SHALL BE OPENED AT ONE TIME.

B.

WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF DITCHES.

C.

TRENCH DEWATERING DEVICES SHALL DISCHARGE INTO SEDIMENT TRAPS OR SEDIMENT PONDS.

D.

WHERE PRACTICAL, INSTALL GRAVITY PIPE UTILITIES PRIOR TO INSTALLATION OF OTHER UTILITIES.

3.

UTILITY CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE COFDS.

4.

ALL UTILITY TRENCHES IN THE RIGHT OF WAY SHALL BE BACKFILLED WITH BALLAST PER SECTION 9-03.9(1) WSDOT SPECS.

5.

TESTING OF NEW WATER LINES, STORM SEWER SYSTEMS SHALL NOT BE PERFORMED UNTIL ALL OTHER ADJACENT UTILITIES HAVE BEEN INSTALLED.

6.

ALL UTILITY TRENCHES SHALL BE BACKFILLED AND COMPACTED TO 95% RELATIVE COMPACTION OR 95% MODIFIED PROCTOR PER TRENCHING DETAIL COFSD SS-15.

7.

OPEN CUTTING OF EXISTING ROADWAYS IS ONLY ALLOWED AS APPROVED AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH THE CITY OF FERNDAL E STANDARD DETAIL (COFSD) R-11 AND SS-15.

8.

NO PART OF THE DRAINAGE SYSTEM MAY BE COVERED, CONCEALED, OR PUT INTO USE UNTIL IT HAS BEEN INSPECTED, TESTED, AND ACCEPTED BY THE CITY INSPECTOR
- EARTHWORK
1.

THE CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING UN-COMPACTED OR POORLY COMPACTED FILL SOILS WITHIN THE ROAD PRISM AT THE DIRECTION OF THE DESIGNATED LICENSED GEO TECHNICAL ENGINEER.

2.

THE CONTRACTOR SHALL EXCAVATE AND GRADE TO THE ALIGNMENT, GRADE AND CROSS-SECTIONS SHOWN IN THE PLANS OR ESTABLISHED BY THE PROJECT ENGINEER OF RECORD.

3.

UNSUITABLE MATERIAL FOUND AND NOT FIT FOR USE AS A SUB-GRADE SHALL BE EXCAVATED TO THE BOUNDARIES SET BY THE ENGINEER AND REPLACED WITH A SUITABLE BACKFILL MATERIAL.

4.

THE ENGINEER IS REQUIRED TO CERTIFY SUBGRADE, IN WRITING, PRIOR TO PAVING.

5.

MATERIAL TESTING LAB IS REQUIRED TO SUBMIT TEST REPORTS TO THE ENGINEER OF RECORD, CONTRACTOR, AND THE CITY OF FERNDAL E TO ENSURE PROJECT CERTIFICATION BY THE ENGINEER OF RECORD. THIS REQUIREMENT APPLIES TO ANY FILL EXCEEDING 18" IN ROADWAYS OR LOTS.
- BASE COURSES & CRUSHED SURFACING
1.

GRAVEL BASES AND BALLAST MATERIAL GRADATION SHALL MEET THE CURRENT EDITION OF WSDOT SPECS.

2.

BALLAST, GRAVEL BASE AND CRUSHED SURFACING SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY.

3.

THE GRADED AND COMPACTED SURFACE OF THE CRUSHED SURFACING TOP COURSE SHALL BE WITHIN ¼ INCH OF FINISHED GRADE.

4.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL AND COMPACTION TESTING. PRIOR TO IMPORTING OF MATERIAL FOR BASE AND CRUSHED SURFACING TOP COURSE THE CONTRACTOR SHALL PROVIDE EVIDENCE OF SATISFACTORY PASSING GRADING AND DEGRADATION TEST RESULTS TO THE ENGINEER.
- STORM DRAINAGE
1.

THE FOLLOWING STANDARD DETAILS SHALL BE USED FOR CONSTRUCTION OF STORM DRAIN IMPROVEMENTS:

CATCH BASINS TYPE 1

COFSD S-T-1

2.

STORM SEWER PIPE HAVING DIAMETERS GREATER THAN 8" SHALL BE CORRUGATED POLYETHYLENE PIPE (CPEP) PER SECTION 7-04 OF THE WSDOT SPECS. ALL OTHER STORM SEWER PIPE SHALL BE PVC UNLESS OTHERWISE SPECIFIED ON PLANS.

3.

ALL CATCH BASIN GRATES SHALL INCLUDE THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS".

4.

CONTROL DENSITY FILL SHALL BE USED IN AREAS WHERE LESS THAN 18" OF COVER IS MAINTAINED OVER THE PROPOSED STORM PIPES (PIPE IS IN ROAD BASE SECTION), AS SHOWN IN THE PLANS. DUCTILE IRON PIPE OR REINFORCED CONCRETE PIPE MAY BE USED FOR STORM PIPES WITH LESS THAN 18" OF COVER IF APPROVED BY THE CITY.

5.

COVER OVER PIPES SHALL BE MAINTAINED DURING CONSTRUCTION. DEPTH OF COVER REQUIRED SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS AND WILL VARY WITH THE VEHICLE LOADS TRAVELING OVER THE PIPE. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR DAMAGE TO PIPE DURING CONSTRUCTION ACTIVITIES.

6.

AT THE END OF ALL SITE CONSTRUCTION, THE CONTRACTOR SHALL CLEAN ALL DEBRIS FROM ALL NEW AND AFFECTED CATCH BASINS AND STORMWATER CONVEYANCES. DEBRIS SHALL NOT BE ALLOWED TO ENTER STREAMS OR OFF-SITE STORMWATER SYSTEMS.
- CITY OF FERNDAL E GENERAL NOTES
7.

EACH STORM SEWER STUB SHALL BE CAPPED WITH A WATERTIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION WITH A 2" DIA. WHITE PVC PIPE (MIN. SCHEDULE 40) STENCILED WITH THE WORD "DRAIN" AND THE PIPE INVERT INDICATED. THE LOCATION MARKER SHALL BE CONNECTED TO THE SERVICE STUB BY A #12 COPPER WIRE.
- WATER
1.

THE FOLLOWING STANDARD DETAILS SHALL BE USED IN CONSTRUCTING WATER SUPPLY SYSTEM IMPROVEMENTS:

PIPE BEDDING

COFSD W-11 (SAME AS COFSD SS-15)

TRENCH BACKFILL

COFSD W-11 (SAME AS COFSD SS-15)

FIRE HYDRANT ASSEMBLY

COFSD W-1

THRUST BLOCKING

COFSD W-2, W-3

WATER SERVICE

COFSD W-5A

2.

ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF FERNDAL E DEVELOPMENT STANDARDS, SECTIONS 702 AND 705 AND THE MOST RECENT VERSION OF THE WSDOT STANDARD PLANS.

3.

ALL WATER MAIN PIPE SHALL BE DUCTILE IRON PER SECTION 9-30.1(1) OF THE WSDOT SPECS., UNLESS OTHERWISE APPROVED BY THE PUBLIC WORKS DIRECTOR.

4.

MATERIAL FOR FITTINGS SUCH AS CROSSES, TEES, BENDS, REDUCERS AND SLEEVES SHALL BE DUCTILE IRON. JOINTS SHALL BE M.J., FLANGED OR PUSH-ON JOINTS AND SHALL CONFORM TO SECTION 9-30.2(1) OF THE WSDOT SPECS.

5.

CONCRETE BLOCKING SHALL BE AS SPECIFIED IN CITY OF FERNDAL E STANDARD DETAILS W-2, W-3 AND W-4, OR AS DIRECTED BY THE PROJECT ENGINEER. BLOCKS SHALL BE INSTALLED AS SPECIFIED IN SECTION 7-09.3(21) OF THE WSDOT SPECS. NO PRE-CAST BLOCKS ARE ALLOWED.

6.

CONNECTIONS TO EXISTING WATER MAINS - THE CONTRACTOR MUST NOTIFY THE CITY OF FERNDAL E PUBLIC WORKS DIRECTOR OF A PROPOSED CONNECTION AT LEAST FOUR WORKING DAYS IN ADVANCE.

7.

ALL HYDROSTATIC TESTING AND DISINFECTION OF WATER MAINS SHALL CONFORM TO SECTION 7-09.3(23) AND SECTION 7-09.3(24) OF THE WSDOT SPECS. HYDROSTATIC TEST PRESSURE FOR WATER MAIN ACCEPTANCE SHALL BE 150 PSI IN EXCESS OF 100 PSI OPERATING PRESSURE FOR THE CITY OF FERNDAL E OR 250 PSI. THE HYDROSTATIC TESTING IS TO BE INSPECTED BY THE CITY. THE CONTRACTOR SHALL CALL AT LEAST 24 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS. THE CITY OF FERNDAL E LABORATORY SHALL CONDUCT ALL DISINFECTION TESTS AND BACTERIOLOGICAL TESTS. THE PIPE WILL NOT PASS TESTING UNLESS A RESULT OF ZERO BACTERIAL COUNT IS MEASURED 24 HOURS AFTER THE PIPE PASSED HYDROSTATIC TEST AND FLUSHED.

8.

BACKFILL SHALL BE BALLAST PER SECTION 9-03.9(1) WSDOT SPECS. IN ALL STREET RIGHTS-OF-WAY, COMPACTED TO MINIMUM 95% RELATIVE COMPACTION. IN UNIMPROVED AREAS, MINIMUM COMPACTION SHALL BE 90% OF RELATIVE COMPACTION.

9.

ALL PIPES SHALL HAVE A MINIMUM COVER OF 36" AND A MAXIMUM OF 42" UNLESS OTHERWISE DIRECTED BY THE PUBLIC WORKS DIRECTOR.

10.

ALL VALVES SHALL BE EITHER GATE OR BUTTERFLY TYPE VALVES AND SHALL BE INSTALLED WITH SLIP TYPE CAST IRON VALVE BOXES. GATE VALVES SHALL BE USED FOR LINES 2 INCHES THROUGH 10 INCHES IN DIAMETER. GATE VALVE MAY BE USED IN LIEU OF BUTTERFLY VALVE FOR 12" LINES IF APPROVED BY THE CITY. SHORT-BODY VALVES SUITABLE FOR A NON-SHOCK SHUT-OFF PRESSURE OF 130 PSI AND SUITABLE FOR DIRECT BURIAL ARE SPECIFIED. GATE VALVES SHALL BE RESILIENT SEATED IRON-BODY, FULL-BRONZE MOUNTED VALVES CONFORMING TO AWWA C509 AND SUITABLE FOR SERVICE WITH THE TYPE AND CLASS OF PIPE USED. ALL VALVES SHALL HAVE NON-RISING STEMS AND SHALL OPEN COUNTERCLOCKWISE AND SHALL BE EQUIPPED WITH A 2 INCH SQUARE OPERATING NUT. VALVES WILL BE FLANGE OR M.J. JOINTS. VALVE MARKERS SHALL BE LOCATED OUTSIDE OF PAVEMENT SECTIONS.

11.

WATER SERVICE TAP INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE COFSD W-5.

12.

FIRE HYDRANTS AND FIRE MAINS MUST CONFORM TO COFDS (COFSD W-1, WSDOT B-19) AND THE FOLLOWING STANDARDS:

A.

FIRE HYDRANTS SHALL HAVE TWO INDIVIDUALLY VALVED 2-1/2" PORTS AND ONE 5-1/4" MAIN VALVE OPENING. A 4-1/2" NST PUMPER NOZZLE AND A 5" STORZ PORT WITH CAP AND AIRCRAFT CABLE SHALL BE SUPPLIED. HYDRANTS SHALL BE M.H. 929T HYDRANTS.

B.

FIRE HYDRANTS SHALL HAVE THE STORZ PORT FACING THE REQUIRED ACCESS AND THE BASE FLANGE OF THE HYDRANT MUST NOT VARY MORE THAN 1 FOOT IN ELEVATION FROM THE GRADE LEVEL OF THE REQUIRED ACCESS. THE LOWEST STEM SHALL BE A MINIMUM OF 14" ABOVE THE GROUND.

C.

IF THE PUBLIC WORKS DIRECTOR DETERMINES THAT FIRE HYDRANTS ARE VULNERABLE TO VEHICULAR DAMAGE, APPROPRIATE HYDRANT GUARD POSTS SHALL BE PROVIDED. NO OBSTRUCTIONS SHALL EXIST WITHIN A 3-FOOT WORKING AREA OF EACH REQUIRED ACCESS. CRASH POSTS SHALL BE 4" CEMENT-FILLED PIPE A MIN. OF 3' IN HEIGHT WITH A MIN. OF 2' OF PIPE BELOW GRADE. HYDRANT SHUTOFF VALVES SHALL BE LOCATED BETWEEN 5' AND 20' FROM THE HYDRANT.

D.

UNDERGROUND SUPPLIES TO FIRE HYDRANTS MUST BE INSPECTED. SUCH INSPECTION SHALL INCLUDE VISUAL INSPECTION OF PIPING AND HYDROSTATIC PRESSURE TESTING TO A MIN. OF 250 PSI. A FLOW TEST WILL BE REQUIRED WHEN INSTALLATION IS COMPLETE.

E.

FIRE HYDRANTS MUST BE MAINTAINED IN AN OPERABLE CONDITION AT ALL TIMES AND MUST BE REPAIRED OR REPLACED WHEN DEFECTIVE. HYDRANTS SHALL BE FULLY OPERABLE BEFORE CONSTRUCTION COMMENCES ABOVE GRADE LEVEL.

ROAD

1.

THE FOLLOWING STANDARD DETAILS SHALL BE USED FOR CONSTRUCTION OF THE STANDARD STREET SECTION:

TYPICAL STREET SECTION

COFSD R-4

PCC DRIVEWAYS

COFSD R-6

PCC CURB AND GUTTER

COFSD R-9

PCC SIDEWALKS

COFSD R-12

PCC SIDEWALK RAMPS

WSDOT STD. DETAIL F-40.12-01

WSDOT STD. DETAIL F-40.15.02

COFSD R-1 3/4 IMPROVEMENT

2.

ROADWAY EXCAVATION WITHIN THE ROADWAY PRISM SHALL BE CUT TO A UNIFORM GRADE. THE COMPLETED SUBGRADE SURFACE SHALL NOT VARY MORE THAN 0.05-FOOT FROM THE LOWER EDGE OF A 15-FOOT STRAIGHTEDGE PLACED ON THE SUBGRADE PARALLEL TO THE CENTERLINE UNLESS APPROVED BY THE ENGINEER.

3.

THE OWNER SHALL PROVIDE TO THE ENGINEER A REPORT FROM A QUALIFIED GEOTECHNICAL FIRM CERTIFYING THE COMPACTION OF THE GRAVEL BASE/BALLAST UNDER ALL PAVING AREAS.

4.

HOT MIX ASPHALT WORK SHALL BE DONE IN ACCORDANCE WITH SECTION 5-04 OF THE WDOT SPECS., EXCEPT AS MODIFIED HEREIN. CONNECTION TO EXISTING PAVEMENT SHALL BE TO A STRAIGHT NEATLY-TRIMMED LINE.

5.

CRUSHED ROCK SURFACING FOR PAVEMENT SHALL BE IN ACCORDANCE WITH WSDOT SPECS., SECTION 9-03.9(3); BALLAST PER SECTION 9-03.9(1).

6.

CEMENT CONCRETE SHALL BE CLASS 3000 (WITH AIR ENTRAINMENT) IN ACCORDANCE WITH WSDOT SPECS., SECTION 6-02.3(2)B.

7.

CEMENT CONCRETE SIDEWALK SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS OR AS DESIGNATED BY THE ENGINEER IN ACCORDANCE WITH COFSD R-12.

8.

CEMENT CONCRETE DRIVEWAYS SHALL BE 6 INCHES THICK AND CONSTRUCTED WHERE SHOWN ON THE PLANS OR DESIGNATED BY THE ENGINEER IN ACCORDANCE WITH THE COFSD R-6. A 2- INCH LAYER OF 3/4 INCH DRAIN ROCK SHALL BE USED FOR DRIVEWAY BEDDING.

9.

CEMENT CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED WHERE SHOWN ON THE PLANS OR AS DESIGNED BY THE ENGINEER, IN ACCORDANCE WITH WSDOT SPECS., SECTION 8-04 AND COFSD R-8 AND R-9. HANDICAP RAMPS SHALL BE CONSTRUCTED PER WSDOT STD. DETAILS F-40.12-01 & F-40.15-02. WHERE NEW CEMENT CONCRETE CURB AND GUTTER IS TO CONNECT TO EXISTING CURB AND GUTTER, ASSURE THAT NO ABRUPT OFFSETS IN LINE OR GRADE SHALL BE CONSTRUCTED WHICH WILL BE UNSIGHTLY OR IMPEDE FLOW IN THE GUTTER LINE.

10.

PAVEMENT:

A.

SOIL RESIDUAL HERBICIDE SHALL BE PLACED WITHIN 24 HOURS OF PAVING.

B.

A TACK COAT OF ASPHALT SHALL BE APPLIED BETWEEN ALL COURSES OF ASPHALT.

C.

ALL PAVEMENT REPAIR SHALL BE SAW-CUT BEFORE REMOVAL. AR-4000W SHALL BE APPLIED TO ALL EDGES OF EXISTING PAVEMENT. WHERE NEWLY CONSTRUCTED PAVING MEETS EXISTING PAVING, THE APPLICANT SHALL PROVIDE A SMOOTH TRANSITION FROM EXISTING TO PROPOSED PAVING. CONTRACTOR SHALL COLD PLANE PER DIMENSIONS SPECIFIED ON THE PLANS, AND INSTALL A MINIMUM 2-FOOT WIDE PETROTAC PAVING FABRIC, OR EQUIVALENT, OVER JOINT BETWEEN PAVING LIFTS.

11.

THRU-CURB BASINS AND THRU-CURB INLETS CONFORMING TO THE WSDOT SPECS, SECTION 7-05 SHALL BE CONSTRUCTED AT THE LOW POINT OF THE CURB FLOW LINES AND TO THE LOCATIONS, DIMENSIONS, AND DETAILS AS SHOWN ON THE PLANS OR DESIGNATED BY THE ENGINEER AND COFSD- R-8.

12.

TRENCH EXCAVATIONS, BEDDING AND PIPE FOR STORMWATER PIPE LAYING SHALL BE IN ACCORDANCE WITH THE WSDOT SPECS., SECTION 7-08.

13.

STORM SEWER PIPE CONSTRUCTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH WSDOT SPECS., SECTION 7-04. LOTS' STORM DRAIN SERVICE LINE SHALL BE 6" PVC PER WSDOT SPECS., SECTION 9-05.1(5)

14.

PERFORATED UNDERDRAIN PIPE SHALL MEET THE WSDOT SPECS., 7-01.3(2).

SANITARY SEWER SYSTEMS

1.

THE FOLLOWING STANDARD DETAILS SHALL BE USED FOR CONSTRUCTION OF SANITARY SEWER IMPROVEMENTS:

PIPE BEDDING

COFSD SS-1

TRENCH BACKFILL

COFSD SS-15

CLEAN OUT

COFSD SS-5

MANHOLE

WSDOT STD. DETAIL B-15-20-01

2.

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH COFSD, A.P.W.A. STANDARD SPECIFICATIONS, AND WSDOT SPECS. SANITARY SEWER SYSTEM INSTALLATION, BOTH PUBLIC AND PRIVATE, IS SUBJECT TO CITY REVIEW AND APPROVAL.

3.

ALL WORK MUST BE INSPECTED TO THE SATISFACTION OF THE CITY OF FERNDAL E. 24 HOUR NOTICE MUST BE GIVEN PRIOR TO STARTING WORK. TESTING OF THE SEWER SYSTEM AND ALL CONNECTIONS TO EXISTING MAINS SHALL BE PERFORMED IN THE PRESENCE AND UNDER THE SUPERVISION OF A CITY OF FERNDAL E REPRESENTATIVE.

4.

SANITARY SEWER MAINS SHALL BE A MINIMUM 8 INCH DIAMETER PVC PIPE CONFORMING TO WSDOT SPECS. 9-05.12(1) AND INSTALLED PER COFDS.

5.

SANITARY SEWER PIPE BEDDING SHALL BE PEA GRAVEL PER COFSD SS-1. ALL TRENCHES SHALL BE BACKFILLED WITH BALLAST WITHIN CITY RIGHT OF WAY AND TRAVELED WAYS OUTSIDE OF RIGHT OF WAY (ACCESS EASEMENTS) AND SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% MODIFIED PROCTOR. USE OF SUITABLE NATIVE BACKFILL OUTSIDE OF TRAVELED WAY SHALL BE SUBJECT TO APPROVAL BY THE CITY.

6.

ALL MANHOLES SHALL BE INSTALLED PER WSDOT STD. DETAIL B-15-20-01 AND SHALL BE PRE-CHANNELED. MANHOLE CONES ARE TO BE OFFSET SUCH THAT LADDER RUNGS ARE PARALLEL TO THE FLOW.

7.

ALL SIDE SEWERS SHALL BE INSTALLED PER COFSD SS-6, SS-8 OR SS-15, EXCEPT THAT SINGLE SIDE SEWERS SHALL HAVE A MINIMUM DIAMETER OF 6" AND A MINIMUM SLOPE OF 2.0%.

8.

CONTRACTOR SHALL EXTEND SEWER STUBS 5 FT BEYOND UTILITY CORRIDOR OR 15 FEET BEYOND RIGHT-OF-WAY LINE.

9.

EACH SIDE SEWER STUB SHALL BE CAPPED WITH A WATERTIGHT PLUG. EACH STUB SHALL BE MARKED FOR LOCATION WITH A 2" DIA. WHITE PVC PIPE (MIN. SCHEDULE 40) WITH THE TOP 18" PAINTED GREEN AND STENCILED WITH THE WORD "SEWER" AND THE PIPE INVERT INDICATED. THE LOCATION MARKER SHALL BE CONNECTED TO THE SERVICE STUB BY A #12 COPPER WIRE.

10.

SANITARY SEWER SYSTEM REQUIRES CLEANING AND TESTING IN CONFORMANCE WITH WSDOT 7-17.3(2).

11.

EXISTING WELL AND SEPTIC MUST BE PROPERLY DECOMMISSIONED THROUGH THE WHATCOM COUNTY HEALTH DEPARTMENT. WRITTEN VERIFICATION AND APPROVAL FROM THE HEALTH DEPARTMENT WILL BE REQUIRED PRIOR TO PROJECT ACCEPTANCE.

RECORD DRAWING 06/05/2020

FERNDAL E, WASHINGTON

MALLOY TERRACE PUD

PHASE 2 CONSTRUCTION

GENERAL NOTES

CASCADE ENGINEERING GROUP, P.S., INC.

119 Grand Avenue, Suite D
Bellingham, Washington 98225

(360) 306-8161

REVISIONS	DATE

DATE:

06/05/2020

DESIGN:

DRAWN:

LCP

CHECKED:

SCALE:

AS SHOWN

PROJECT NUMBER:

MDGX0001

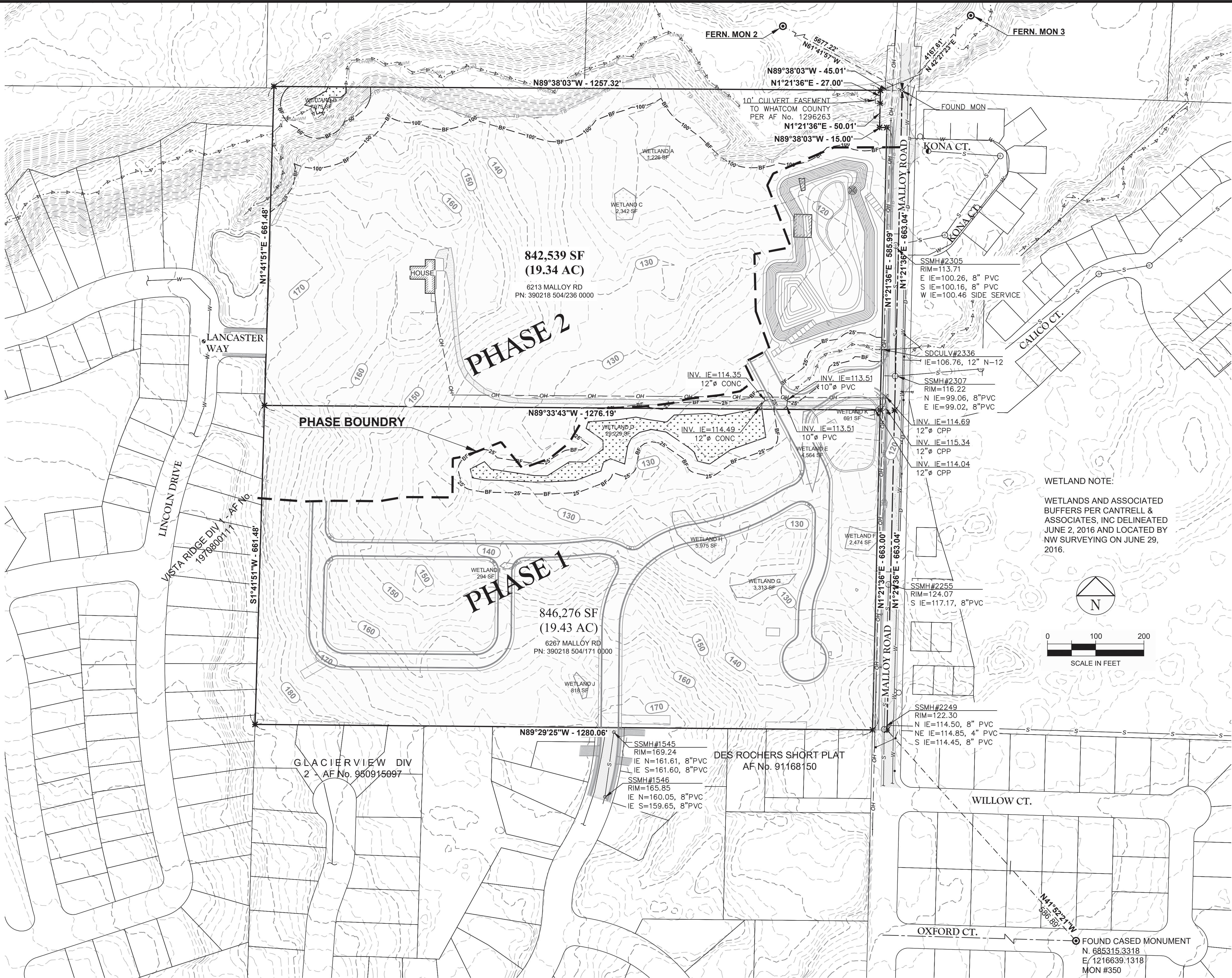
SHEET NO.

C2

OF

00693.002 07/06/20 KB

06/05/2020 8:30AM P:\M\MDGX0001\0400CAD\DWG\Sheets\PHASE 2 CONSTRUCTION PLANS\Record Drawings\C03-EXISTING CONDITIONS\PH2-REC.dwg



HORIZONTAL DATUM:
NAD 83/91 STATE PLANE
COORDINATES

VERTICAL DATUM:
NGVD 29

BASIS OF BEARING:
CITY OF FERNDALE MONUMENT
NETWORK
VISTA RIDGE, DIVISION #3 -
A.F.No. 2010603969

MON #2
N. 689,769.6355
E. 1,211,280.2412

MON #3
N. 690,152.8799
E. 1,219,092.1339

MON #350
N. 685,315.3318
E. 1,216,639.1318

WETLAND NOTE:
WETLANDS AND ASSOCIATED
BUFFERS PER CANTRELL &
ASSOCIATES, INC DELINEATED
JUNE 2, 2016 AND LOCATED BY
NW SURVEYING ON JUNE 29,
2016.



APPROVED

JUN 17 2020

BY
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

RECORD DRAWING 06/05/2020



REVISIONS DATE

DATE: 06/05/2020
DESIGN:
DRAWN: LCP
CHECKED:

SCALE: AS SHOWN

PROJECT NUMBER:

MDGX0001

SHEET NO.

C3

OF

FERDALE, WASHINGTON
MALLOY TERRACE PUD
PHASE 2 CONSTRUCTION
EXISTING CONDITIONS PLAN



00693.003 07/06/20 KB

06/02/2020 11:11AM P:\M\MDGX0001\040CAD\DWG\Sheets\PHASE 2 CONSTRUCTION PLANS\Record Drawings\CO4-SWPPP Notes-PH2-REC.dwg

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

THIS STORMWATER POLLUTION PREVENTION PLAN IS PROVIDED IN GENERAL ACCORDANCE WITH THE TERMS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS ADVISED THAT THE PROJECT AREA MAY DRAIN TO WETLANDS AND/OR STATE WATERS AND THAT THE CONTRACTOR IS RESPONSIBLE TO PROTECT THE RECEIVING WATERS FROM DELETERIOUS EFFECTS OF CONSTRUCTION.

THE CONTRACTOR IS REQUIRED TO HAVE A COPY OF THE SWPPP ONSITE AT ALL TIMES.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE EROSION CONTROL MEASURES SHOWN OR DESCRIBED IN THE CONTRACT DOCUMENTS AND ANY ADDITIONAL MEASURES THAT MAY BE REQUIRED BY THE CONTRACTORS MEANS AND METHODS OF CONSTRUCTION AS NEEDED TO CONTROL EROSION AND SEDIMENT AT THE CONSTRUCTION SITE AND TO PREVENT VIOLATION OF SURFACE WATER QUALITY, GROUND WATER QUALITY, OR SEDIMENT MANAGEMENT STANDARDS. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION AND UNTIL ALL DISTURBED EARTH IS STABILIZED IN FINISH GRADES.

THE FOLLOWING DESCRIBES HOW THE CONSTRUCTION SWPPP ADDRESSES EACH OF THE 12 REQUIRED ELEMENTS. REFER TO THESE PLANS FOR DRAWINGS OF THE PROJECT, VICINITY MAP, SITE MAP, CONVEYANCE SYSTEMS, EROSION AND SEDIMENT CONTROL MEASURES, AND EROSION AND SEDIMENT CONTROL DETAILS.

ELEMENT #1: PRESERVE VEGETATION/MARK CLEARING LIMITS

1. PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES (INCLUDING CLEARING AND GRADING) CLEARLY MARK ALL CONSTRUCTION LIMITS AS SHOWN ON THE DRAWINGS.

2. SILT FENCE, GEOTEXTILE ENCASED BARRIERS, CONSTRUCTION FENCE, ORANGE PLASTIC FENCE, OR OTHER APPROVED MEASURES MAY BE USED TO MARK THE CLEARING LIMITS AT THE CONTRACTOR'S OPTION.

3. THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION SHALL BE RETAINED IN AN UNDISTURBED STATE TO THE MAXIMUM DEGREE PRACTICABLE.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C101: PRESERVING NATURAL VEGETATION
BMP C103: HIGH VISIBILITY PLASTIC OR METAL FENCE

ELEMENT #2: ESTABLISH CONSTRUCTION ACCESS

1. CONSTRUCTION VEHICLE ACCESS AND EXIT SHALL UTILIZE EXISTING SITE APPROACH ROADS AND PAVED AREAS TO MINIMIZE TRACKING OF SEDIMENT ONTO PUBLIC ROADS.

2. IF SEDIMENT IS TRACKED OFF SITE, PUBLIC ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY, OR MORE FREQUENTLY DURING WET WEATHER. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

3. STREET WASHING IS ALLOWED ONLY AFTER SEDIMENT IS REMOVED AS DESCRIBED ABOVE. STREET WASH WASTEWATER SHALL BE CONTROLLED BY PUMPING BACK ON SITE OR OTHERWISE BE PREVENTED FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO WATERS OF THE STATE.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C105: STABILIZED CONSTRUCTION ENTRANCE
BMP C107: CONSTRUCTION ROAD / PARKING AREA STABILIZATION

ELEMENT #3: CONTROL FLOW RATES

1. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VELOCITY AND PEAK VOLUMETRIC FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C207: CHECK DAMS
BMP C208: TRIANGULAR SILT DIKE
BMP C235: STRAW WATTLES

ELEMENT #4: INSTALL SEDIMENT CONTROLS

1. THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION SHALL BE RETAINED IN AN UNDISTURBED STATE TO THE MAXIMUM DEGREE PRACTICABLE.

2. SEDIMENT CONTROL BMPs SHALL BE CONSTRUCTED AS ONE OF THE FIRST STEPS IN GRADING. THESE BMPs SHALL BE FUNCTIONAL BEFORE OTHER LAND DISTURBING ACTIVITIES TAKE PLACE.

3. PRIOR TO LEAVING THE CONSTRUCTION SITE, STORMWATER RUNOFF FROM DISTURBED AREAS SHALL PASS THROUGH AN APPROPRIATE SEDIMENT REMOVAL BMP. RUNOFF FROM FULLY STABILIZED AREAS MAY BE DISCHARGED WITHOUT A SEDIMENT REMOVAL BMP, BUT MUST MEET THE FLOW CONTROL PERFORMANCE STANDARD OF ELEMENT #3.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C232: GRAVEL FILTER BERM
BMP C233: SILT FENCE
BMP C235: STRAW WATTLES
BMP C236: VEGETATIVE FILTRATION

ELEMENT #5: STABILIZE SOILS

1. EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPs THAT PROTECT THE SOIL FROM EROSION FORCES OF RAINDROPS, FLOWING WATER, AND WIND.

2. TO PREVENT EROSION, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN THE TIME PERIODS SET FORTH BELOW:

DURING THE WET SEASON (OCTOBER 1 - APRIL 30): 2 DAYS
DURING THE DRY SEASON (MAY 1 - SEPT. 30): 7 DAYS

THIS STABILIZATION REQUIREMENT APPLIES TO ALL SOILS ON SITE, WHETHER AT FINAL GRADE OR NOT. THESE TIMES MAY BE ADJUSTED BY THE LOCAL PERMITTING AUTHORITY IF IT CAN BE SHOWN THAT SITE CONDITIONS OR THE AVERAGE TIME BETWEEN STORM EVENTS JUSTIFIES A DIFFERENT STANDARD.

3. SOILS SHALL BE STABILIZED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST.

4. SOIL STOCKPILES SHALL BE STABILIZED FROM EROSION, PROTECTED WITH SEDIMENT TRAPPING MEASURES, AND WHERE POSSIBLE, BE LOCATED AWAY FROM STORM DRAIN INLETS, WATERWAYS, AND DRAINAGE CHANNELS.

5. APPLICABLE BMPs INCLUDE, BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, PLASTIC COVERING, EROSION CONTROL FABRICS AND MATTING, SOIL APPLICATION OF POLYACRYLAMIDE (PAM), THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED AND DUST CONTROL. SELECT SOIL STABILIZATION MEASURES SHALL BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, ESTIMATED DURATION OF USE, AND THE POTENTIAL WATER QUALITY IMPACTS.

6. REMOVE ALL EROSION CONTROL MEASURES AS SOON AS PRACTICAL AFTER ESTABLISHMENT OF UNIFORM GRASS GROWTH OR INSTALLATION OF OTHER PERMANENT STABILIZATION MEASURES. REPAIR ANY DAMAGE TO STABILIZED SURFACES AFTER REMOVAL OF TESC MEASURES.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C120: TEMPORARY AND PERMANENT SEEDING
BMP C121: MULCHING
BMP C122: NETS AND BLANKETS
BMP C123: PLASTIC COVERING
BMP C125: TOPSOILING

ELEMENT #6: PROTECT SLOPES

1. DESIGN, CONSTRUCT, AND PHASE CUT AND FILL SLOPES IN A MANNER THAT WILL MINIMIZE EROSION. APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, REDUCING CONTINUOUS LENGTH OF SLOPE WITH TERRACING AND DIVERSIONS, REDUCING SLOPE STEEPNESS, AND ROUGHENING SLOPE SURFACES (e.g., TRACK WALKING).

2. OFF-SITE STORMWATER RUN-ON OR GROUNDWATER SHALL BE DIVERTED AWAY FROM SLOPES AND DISTURBED AREAS WITH INTERCEPTOR DIKES, PIPES, AND/OR SWALES. OFF-SITE STORMWATER SHOULD BE MANAGED SEPARATELY FROM STORMWATER GENERATED ON THE SITE.

3. DO NOT CLEAR AND GRUB SLOPES GREATER THAN 4 (HORIZONTAL):1 (VERTICAL) UNLESS FURTHER WORK RESULTING IN STABILIZATION OF THE SLOPES TO BE CLEARED AND GRUBBED IS SCHEDULED.

4. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES, CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS.

5. CHECK DAMS SHALL BE PLACED AT REGULAR INTERVALS WITHIN CONSTRUCTED CHANNELS THAT ARE CUT DOWN A SLOPE.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C120: TEMPORARY AND PERMANENT SEEDING
BMP C207: CHECK DAMS
BMP C208: TRIANGULAR SILT DIKE

ELEMENT #7: PROTECT DRAIN INLETS

1. ALL STORM DRAIN INLETS OPERABLE DURING CONSTRUCTION AND ALL INLETS WITHIN 200' DOWNSTREAM OF THE PROJECT SITE SHALL BE PROTECTED WITH CATCH BASIN FILTERS SO THAT STORMWATER RUNOFF DOES NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT. CATCH BASIN FILTERS IN THE ROADWAY WILL BE OIL AND SEDIMENT FILTERS AND CATCH BASIN FILTERS OUTSIDE OF THE ROADWAY WILL BE SEDIMENT FILTERS.

2. APPROACH ROADS SHALL BE KEPT CLEAN. SEDIMENT AND STREET WASH WATER SHALL NOT BE ALLOWED TO ENTER STORM DRAINS WITHOUT PRIOR AND ADEQUATE TREATMENT.

3. INLET PROTECTION DEVICES SHALL BE CLEANED OR REMOVED AND REPLACED WHEN SEDIMENT HAS FILLED ONE-THIRD OF THE AVAILABLE STORAGE (OR WHEN FILLED WITH SIX-INCHES OF SEDIMENT).

SUGGESTED BMPs TO BE USED:

BMP C220: STORM DRAIN INLET PROTECTION

ELEMENT #8: STABILIZE CHANNELS AND OUTLETS

1. ALL TEMPORARY ON-SITE CONVEYANCE CHANNELS SHALL BE DESIGNED, CONSTRUCTED AND STABILIZED TO PREVENT EROSION FROM THE EXPECTED PEAK 10 MINUTE VELOCITY OF FLOW FROM A TYPE 1A, 10-YR, 24-HR FREQUENCY STORM FOR THE DEVELOPED CONDITION. ALTERNATIVELY, THE 10-YR, 1-HR FLOW RATE INDICATED BY AN APPROVED CONTINUOUS RUNOFF MODEL, INCREASED BY A FACTOR OF 1.6, MAY BE USED.

2. STABILIZATION, INCLUDING ARMORING MATERIAL, ADEQUATE TO PREVENT EROSION OF OUTLETS, ADJACENT STREAM BANKS, SLOPES, AND DOWNSTREAM REACHES SHALL BE PROVIDED AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C202: CHANNEL LINING
BMP C209: OUTLET PROTECTION

ELEMENT #9: CONTROL POLLUTANTS

1. ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS, THAT OCCUR ONSITE SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER.

2. COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM SHALL BE PROVIDED FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND OTHER MATERIALS THAT HAVE THE POTENTIAL TO POSE A THREAT TO HUMAN HEALTH OR THE ENVIRONMENT. ONSITE FUELING TANKS SHALL INCLUDE SECONDARY CONTAINMENT.

3. MAINTENANCE, FUELING, AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES SHALL BE CONDUCTED USING SPILL PREVENTION AND CONTROL MEASURES. CONTAMINATED SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY SPILL INCIDENT.

4. WHEEL WASH OR TIRE BATH WASTEWATER SHALL BE DISCHARGED TO A SEPARATE ONSITE TREATMENT SYSTEM OR TO THE SANITARY SEWER WITH LOCAL SEWER DISTRICT APPROVAL.

5. APPLICATION OF FERTILIZERS AND PESTICIDES, SHALL BE CONDUCTED IN A MANNER AND AT APPLICATION RATES THAT WILL NOT RESULT IN LOSS OF CHEMICAL TO STORMWATER RUNOFF. MANUFACTURERS' LABEL REQUIREMENTS FOR APPLICATION RATES AND PROCEDURES SHALL BE FOLLOWED.

6. BMPs SHALL BE USED TO PREVENT OR TREAT CONTAMINATION OF STORMWATER RUNOFF BY pH MODIFYING SOURCES. THESE SOURCES INCLUDE, BUT ARE NOT LIMITED TO: BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHING AND CURING WATERS, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, AND CONCRETE PUMPING AND MIXER WASHOUT WATERS. PERMITTEES SHALL ADJUST THE pH OF STORMWATER IF NECESSARY TO PREVENT VIOLATIONS OF WATER QUALITY STANDARDS.

7. PERMITTEES SHALL OBTAIN WRITTEN APPROVAL FROM ECOLOGY PRIOR TO USING CHEMICAL TREATMENT, OTHER THAN CARBON DIOXIDE OR DRY ICE TO ADJUST pH.

8. DUST CONTROL BMPs SHALL BE UTILIZED AS REQUIRED TO PREVENT WIND TRANSPORT OF DUST FROM DISTURBED SOIL SURFACES ONTO ROADS, DRAINAGE WAYS, AND SURFACE WATERS.

SUGGESTED BMPs/BMPs TO BE USED:

BMP C140: DUST CONTROL
BMP C151: CONCRETE HANDLING
BMP C152: SAWCUTTING AND SURFACING POLLUTION PREVENTION

ELEMENT #10: CONTROL DEWATERING

1. FOUNDATION, VAULT, AND TRENCH DEWATERING WATER, WHICH HAVE SIMILAR CHARACTERISTICS TO STORMWATER RUNOFF AT THE SITE, SHALL BE DISCHARGED INTO A CONTROLLED CONVEYANCE SYSTEM PRIOR TO DISCHARGE TO A SEDIMENT TRAP OR SEDIMENT POND.

2. CLEAN, NON-TURBID DEWATERING WATER, SUCH AS WELL-POINT GROUND WATER, CAN BE DISCHARGED TO SYSTEMS TRIBUTARY TO, OR DIRECTLY INTO SURFACE WATERS OF THE STATE, AS SPECIFIED IN ELEMENT #8, PROVIDED THE DEWATERING FLOW DOES NOT CAUSE EROSION OR FLOODING OF RECEIVING WATERS. CLEAN DEWATERING WATER SHOULD NOT BE ROUTED THROUGH STORMWATER SEDIMENT PONDS.

3. OTHER DEWATERING DISPOSAL OPTIONS MAY INCLUDE:
a) INFILTRATION.
b) TRANSPORT OFF SITE IN A VEHICLE, SUCH AS A VACUUM FLUSH TRUCK, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATERS.
c) ECOLOGY APPROVED ON-SITE CHEMICAL TREATMENT OR OTHER SUITABLE TREATMENT TECHNOLOGIES.
d) SANITARY SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL, IF THERE IS NO OTHER OPTION.
e) USE OF A SEDIMENTATION BAG (DIRTBAG OR APPROVED EQUAL) WITH OUTFALL TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING.

4. HIGHLY TURBID CONTAMINATED DEWATERING WATER FROM CONSTRUCTION EQUIPMENT OPERATION, CLAMSHELL DIGGING, CONCRETE TREMIE POUR, OR WORK INSIDE A COFFERDAM SHALL BE HANDLED SEPARATELY FROM STORMWATER.

ELEMENT #11: MAINTAIN BMPs

1. INSPECT EROSION CONTROL DEVICES ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. MAKE NECESSARY REPAIRS AND MAINTENANCE TO ENSURE CONTINUED PERFORMANCE OF EROSION AND SEDIMENT CONTROLS.

2. WHEN SEDIMENT ACCUMULATION IN SEDIMENTATION STRUCTURES, OTHER THAN INLET PROTECTION DEVICES, HAS REACHED A POINT ONE-THIRD DEPTH OF SEDIMENT STRUCTURE OR DEVICE, OR IF FLOW THROUGH THE DEVICE IS REDUCED BY MORE THAN ONE-THIRD CAPACITY, THE CONTRACTOR SHALL REMOVE AND REPLACE DISPOSABLE DEVICES OR CLEAN AND DISPOSE OF SEDIMENT.

3. TEMPORARY EROSION AND SEDIMENT CONTROL BMPs SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOILS SHALL BE PERMANENTLY STABILIZED.

ELEMENT #12: MANAGE THE PROJECT

1. PHASING OF CONSTRUCTION:

a) DEVELOPMENT PROJECTS SHALL BE PHASED WHERE FEASIBLE IN ORDER TO PREVENT, TO THE MAXIMUM EXTENT PRACTICABLE, THE TRANSPORT OF SEDIMENT FROM THE DEVELOPMENT SITE DURING CONSTRUCTION. RE-VEGETATION OF EXPOSED AREAS AND MAINTENANCE OF THAT VEGETATION SHALL BE AN INTEGRAL PART OF THE CLEARING ACTIVITIES FOR ANY PHASE.

b) CLEARING AND GRADING ACTIVITIES FOR DEVELOPMENTS SHALL BE PERMITTED ONLY IF CONDUCTED PURSUANT TO AN APPROVED SITE DEVELOPMENT PLAN (e.g., SUBDIVISION APPROVAL) THAT ESTABLISHES APPROVED AREAS OF CLEARING, GRADING, CUTTING AND FILLING. WHEN ESTABLISHING THESE PERMITTED CLEARING AND GRADING AREAS, CONSIDERATION SHOULD BE GIVEN TO MINIMIZING REMOVAL OF EXISTING TREES AND MINIMIZING DISTURBANCE AND COMPACTION OF NATIVE SOILS EXCEPT AS NEEDED FOR BUILDING PURPOSES. THESE PERMITTED CLEARING AND GRADING AREAS AND ANY OTHER AREAS REQUIRED TO PRESERVE CRITICAL OR SENSITIVE AREAS, BUFFERS, NATIVE GROWTH PROTECTION EASEMENTS, OR TREE RETENTION AREAS AS MAY BE REQUIRED BY LOCAL JURISDICTIONS, SHALL BE DELINEATED ON THE SITE PLANS AND THE DEVELOPMENT SITE.

2. SEASONAL WORK LIMITATIONS:
FROM OCTOBER 1 THROUGH APRIL 30, CLEARING, GRADING, AND OTHER SOIL DISTURBING ACTIVITIES SHALL ONLY BE PERMITTED IF SHOWN TO THE SATISFACTION OF THE LOCAL PERMITTING AUTHORITY THAT THE TRANSPORT OF SEDIMENT FROM THE CONSTRUCTION SITE TO RECEIVING WATERS WILL BE PREVENTED THROUGH A COMBINATION OF THE FOLLOWING:

a) SITE CONDITIONS INCLUDING EXISTING VEGETATIVE COVERAGE, SLOPE, SOIL TYPE, AND PROXIMITY TO RECEIVING WATERS; AND
b) LIMITATIONS ON ACTIVITIES AND THE EXTENT OF DISTURBED AREAS; AND
c) PROPOSED EROSION AND SEDIMENT CONTROL MEASURES.

BASED ON THE INFORMATION PROVIDED AND LOCAL WEATHER CONDITIONS, THE LOCAL PERMITTING AUTHORITY MAY EXPAND OR RESTRICT THE SEASONAL LIMITATION ON SITE DISTURBANCE. THE LOCAL PERMITTING AUTHORITY SHALL TAKE ENFORCEMENT ACTION - SUCH AS NOTICE OF VIOLATION, ADMINISTRATIVE ORDER, PENALTY, OR STOP-WORK ORDER UNDER THE FOLLOWING CIRCUMSTANCES:
- IF, DURING THE COURSE OF ANY CONSTRUCTION ACTIVITY OR SOIL DISTURBANCE DURING THE SEASONAL LIMITATION PERIOD, SEDIMENT LEAVES THE CONSTRUCTION SITE CAUSING A VIOLATION OF THE SURFACE WATER QUALITY STANDARD; OR
- IF CLEARING AND GRADING LIMITS OR EROSION AND SEDIMENT CONTROL MEASURES SHOWN IN THE APPROVED PLAN ARE NOT MAINTAINED.

THE FOLLOWING ACTIVITIES ARE EXEMPT FROM THE SEASONAL CLEARING AND GRADING LIMITATIONS:

a) ROUTINE MAINTENANCE AND NECESSARY REPAIR OF EROSION AND SEDIMENT CONTROL BMPs;
b) ROUTINE MAINTENANCE OF PUBLIC FACILITIES OR EXISTING UTILITY STRUCTURES THAT DO NOT EXPOSE THE SOIL OR RESULT IN THE REMOVAL OF THE VEGETATIVE COVER TO SOIL; AND
c) ACTIVITIES WHERE THERE IS ONE HUNDRED PERCENT INFILTRATION OF SURFACE WATER RUNOFF WITHIN THE SITE IN APPROVED AND INSTALLED EROSION AND SEDIMENT CONTROL FACILITIES.

3. COORDINATE WITH UTILITIES AND OTHER CONTRACTORS:
THE PRIMARY PROJECT PROPONENT SHALL EVALUATE, WITH INPUT FROM UTILITIES AND OTHER CONTRACTORS, THE STORMWATER MANAGEMENT REQUIREMENTS FOR THE ENTIRE PROJECT, INCLUDING THE UTILITIES, WHEN IMPLEMENTING THE CONSTRUCTION SWPPP.

4. INSPECTION AND MONITORING:
A) A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL SHALL BE IDENTIFIED AT THE PRE-CONSTRUCTION MEETING AND SHALL BE ON-SITE OR ON-CALL AT ALL TIMES. EMERGENCY CONTACT INFORMATION SHALL BE KEPT ON-SITE. CERTIFICATION MAY BE THROUGH THE CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL CERTIFICATION PROGRAM OFFERED BY WSDOT, ASSOCIATED GENERAL CONTRACTORS OF WASHINGTON - EDUCATION FOUNDATION, OR ANY EQUIVALENT LOCAL OR NATIONAL CERTIFICATION AND/OR TRAINING PROGRAM.

B) IF INSPECTION AND/OR WATER MONITORING OF SITE RUNOFF REVEALS THAT THE BMPs IDENTIFIED IN THE CONSTRUCTION SWPPP ARE INADEQUATE, THE CONTRACTOR SHALL IMMEDIATELY ADD BMPs TO THE SWPPP AS NECESSARY.

C) SITE LOG BOOK: THE CONTRACTOR MUST MAINTAIN A SITE LOG BOOK THAT CONTAINS A RECORD OF THE IMPLEMENTATION OF THE SWPPP AND OTHER PERMIT REQUIREMENTS, INCLUDING THE INSTALLATION AND MAINTENANCE OF BMPs, SITE INSPECTIONS, AND STORMWATER MONITORING.

D) SITE INSPECTIONS: THE CONTRACTOR MUST INSPECT ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, ALL BMPs, AND ALL STORMWATER DISCHARGE POINTS AT LEAST ONCE EVERY CALENDAR WEEK AND WITHIN 24 HOURS OF ANY DISCHARGE FROM THIS SITE. THE CONTRACTOR MUST EXAMINE STORMWATER VISUALLY FOR THE PRESENCE OF SUSPENDED SEDIMENT, TURBIDITY, DISCOLORATION, AND OIL SHEEN. THE EFFECTIVENESS OF BMPs MUST BE EVALUATED AND DETERMINE IF IT IS NECESSARY TO INSTALL, MAINTAIN, OR REPAIR BMPs TO IMPROVE THE QUALITY OF STORMWATER DISCHARGES.

THE CONTRACTOR MUST SUMMARIZE THE RESULTS OF EACH INSPECTION IN AN INSPECTION REPORT OR CHECKLIST AND ENTER THE REPORT/CHECKLIST INTO, OR ATTACH IT TO, THE SITE LOG BOOK. SEE THE DOE'S CONSTRUCTION STORMWATER GENERAL PERMIT, SECTION S.4.B.5. FOR INFORMATION REQUIREMENTS FOR COMPLETING THE INSPECTION FORMS.

E) TURBIDITY/TRANSPARENCY SAMPLING REQUIREMENTS

- a. SAMPLING FREQUENCY
 - THE CONTRACTOR MUST SAMPLE ALL DISCHARGE LOCATIONS AT LEAST ONCE EVERY CALENDAR WEEK WHEN STORMWATER DISCHARGES FROM THE SITE OR ENTERS ANY ON-SITE SURFACE WATERS OF THE STATE.
 - SAMPLES MUST BE REPRESENTATIVE OF THE FLOW AND CHARACTERISTICS OF THE DISCHARGE.
 - SAMPLING IS NOT REQUIRED WHEN THERE IS NO DISCHARGE DURING A CALENDAR WEEK.
 - SAMPLING IS NOT REQUIRED OUTSIDE OF NORMAL WORKING HOURS OR DURING UNSAFE CONDITIONS.
 - IF THE CONTRACTOR IS UNABLE TO SAMPLE DURING A MONITORING PERIOD, THE CONTRACTOR MUST INCLUDE A BRIEF EXPLANATION IN THE MONTHLY DISCHARGE MONITORING REPORT (DMR).
 - SAMPLING IS NOT REQUIRED BEFORE CONSTRUCTION ACTIVITY BEGINS.
- b. SAMPLING LOCATIONS
 - SAMPLING IS REQUIRED AT ALL POINTS WHERE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY IS DISCHARGED OFF SITE.
 - THE CONTRACTOR MUST IDENTIFY ALL SAMPLING POINT(S) ON THE SWPPP SITE MAP AND CLEARLY MARK THESE POINTS IN THE FIELD WITH A FLAG, TAPE, STAKE OR OTHER VISIBLE MARKER.
- c. SAMPLING AND ANALYSIS METHODS
 - THE CONTRACTOR PERFORMS TURBIDITY ANALYSIS WITH A CALIBRATED TURBIDITY METER (TURBIDIMETER) EITHER ON SITE OR AT AN ACCREDITED LAB. THE CONTRACTOR MUST RECORD THE RESULTS IN THE SITE LOG BOOK IN NEPHELOMETRIC TURBIDITY UNITS (NTU).
 - THE CONTRACTOR PERFORMS TRANSPARENCY ANALYSIS ON SITE WITH A 1¼ - INCH DIAMETER, 60 - CENTIMETER (CM) - LONG TRANSPARENCY TUBE. THE CONTRACTOR WILL RECORD THE RESULTS IN THE SITE LOG BOOK IN CENTIMETERS (CM).
 - SEE TABLE BELOW FOR MONITORING BENCHMARKS. SEE THE DOE'S CONSTRUCTION STORMWATER GENERAL PERMIT, SECTION S.4.C.5 FOR TURBIDITY/TRANSPARENCY BENCHMARK VALUES AND REPORTING TRIGGERS.

TABLE 4. MONITORING AND REPORTING REQUIREMENTS

PARAMETER	UNIT	ANALYTICAL METHOD	SAMPLING FREQUENCY	BENCHMARK VALUE	PHONE REPORTING TRIGGER VALUE
TURBIDITY	NTU	SM2130 OR EPA 180.1	WEEKLY, IF DISCHARGING	25 NTU	250 NTU
TRANSPARENCY	CM	MANUFACTURER INSTRUCTIONS, OR ECOLOGY GUIDANCE	WEEKLY, IF DISCHARGING	33 CM	6 CM

5. THE CONSTRUCTION SWPPP SHALL BE RETAINED ON-SITE. THE CONTRACTOR'S TESC RECORD OF RAINFALL, TESC MEASURES, AND INSPECTION SHALL BECOME PART OF THE SWPPP. THE CONSTRUCTION SWPPP SHALL BE MODIFIED BY THE CONTRACTOR'S TESC RECORD WHENEVER THERE IS A SIGNIFICANT CHANGE IN THE DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF ANY BMP.

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FERDALE, WASHINGTON

MALLOY TERRACE PUD
PHASE 2 CONSTRUCTION

S.W.P.P. NOTES



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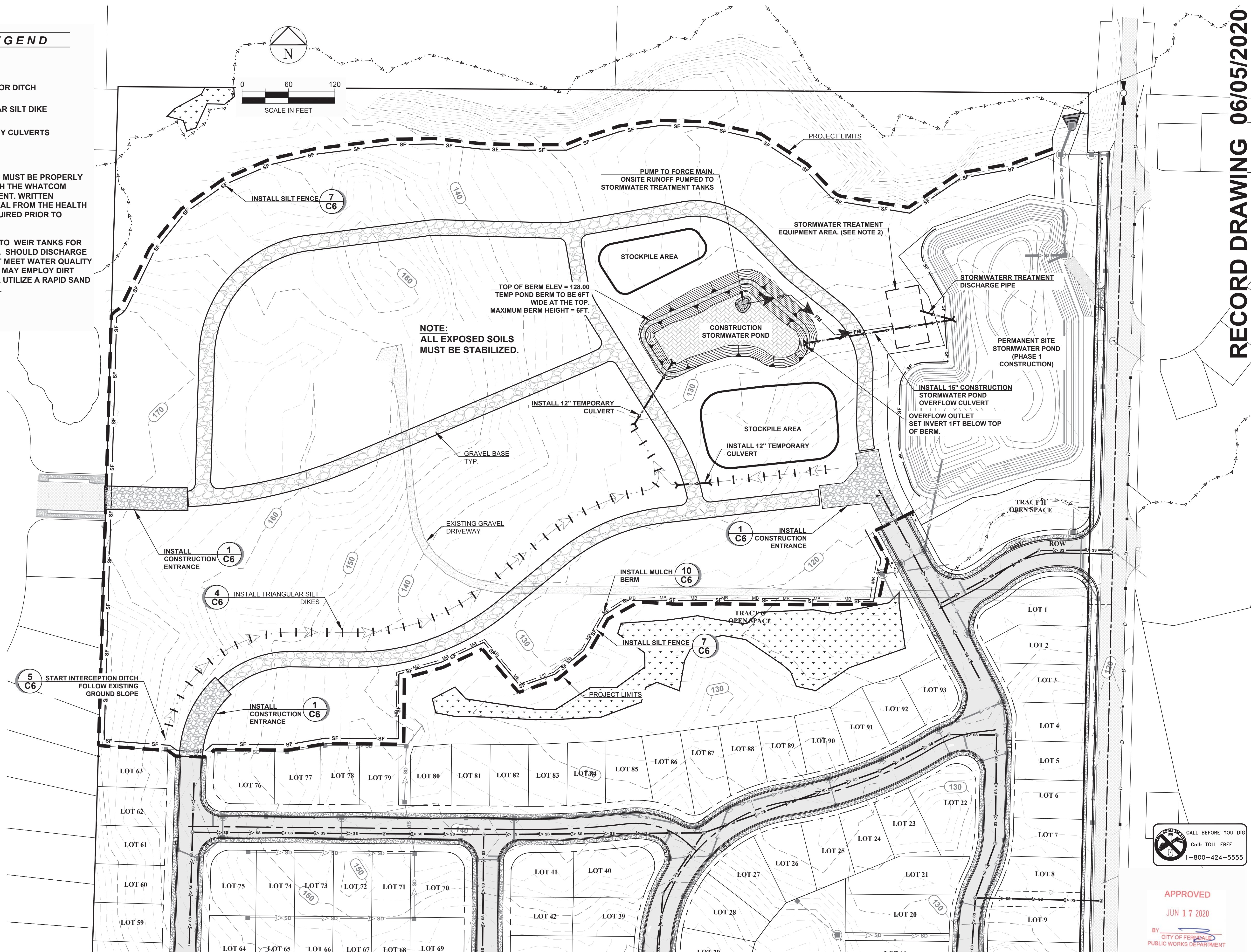
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- | | |
|---|-----------------------------|
|  | SILT FENCE |
|  | INTERCEPTOR DITCH |
|  | TRIANGULAR SILT DIKE |
|  | TEMPORARY CULVERTS |

NOTES:

1. EXISTING WELL AND SEPTIC MUST BE PROPERLY DECOMMISSIONED THROUGH THE WHATCOM COUNTY HEALTH DEPARTMENT. WRITTEN VERIFICATION AND APPROVAL FROM THE HEALTH DEPARTMENT WILL BE REQUIRED PRIOR TO PROJECT ACCEPTANCE.
2. PUMP STORMWATER POND TO WEIR TANKS FOR PARTICULATE SEPARATION. SHOULD DISCHARGE FROM THE WEIR TANKS NOT MEET WATER QUALITY STANDARDS, CONTRACTOR MAY EMPLOY DIRT BAGS AT THE DISCHARGE OR UTILIZE A RAPID SAND FILTER SYSTEM AS NEEDED.



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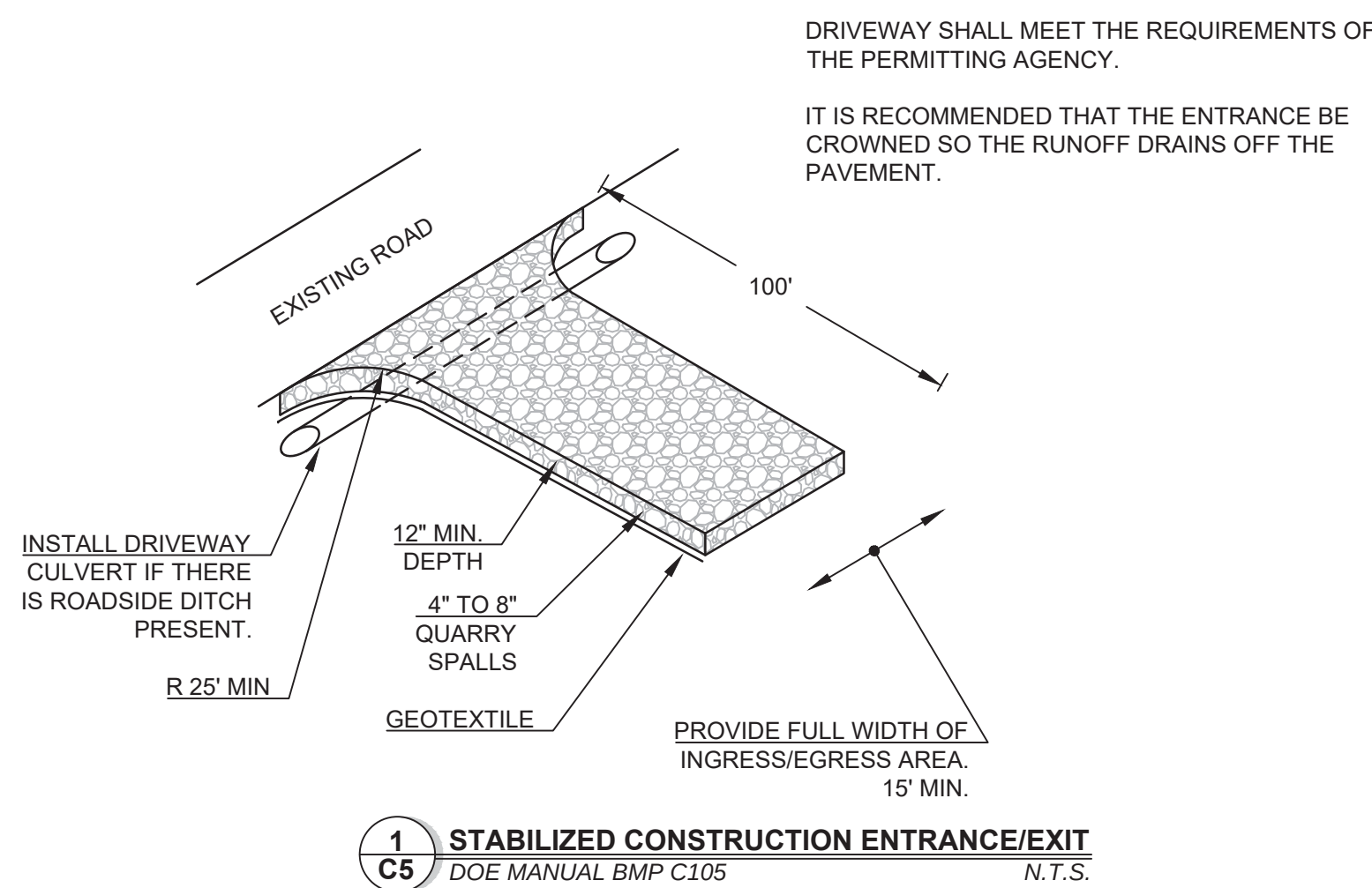
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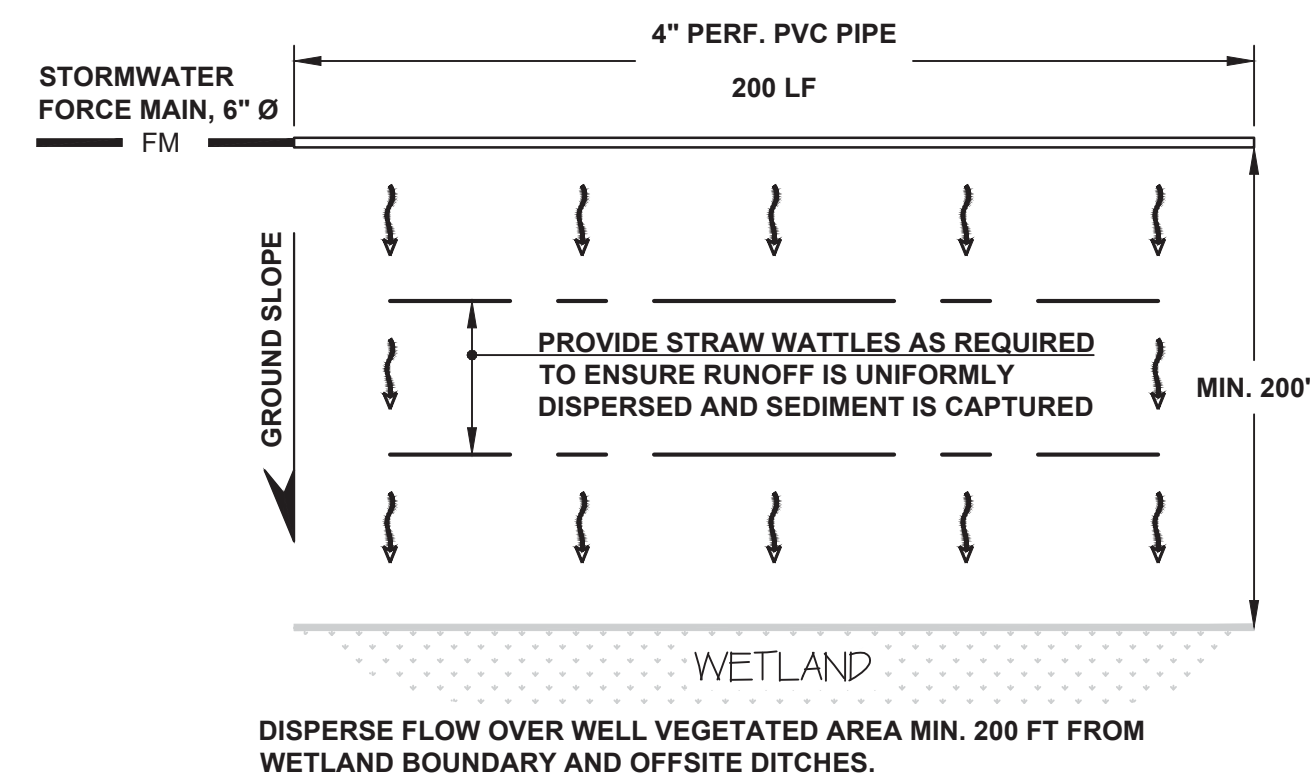
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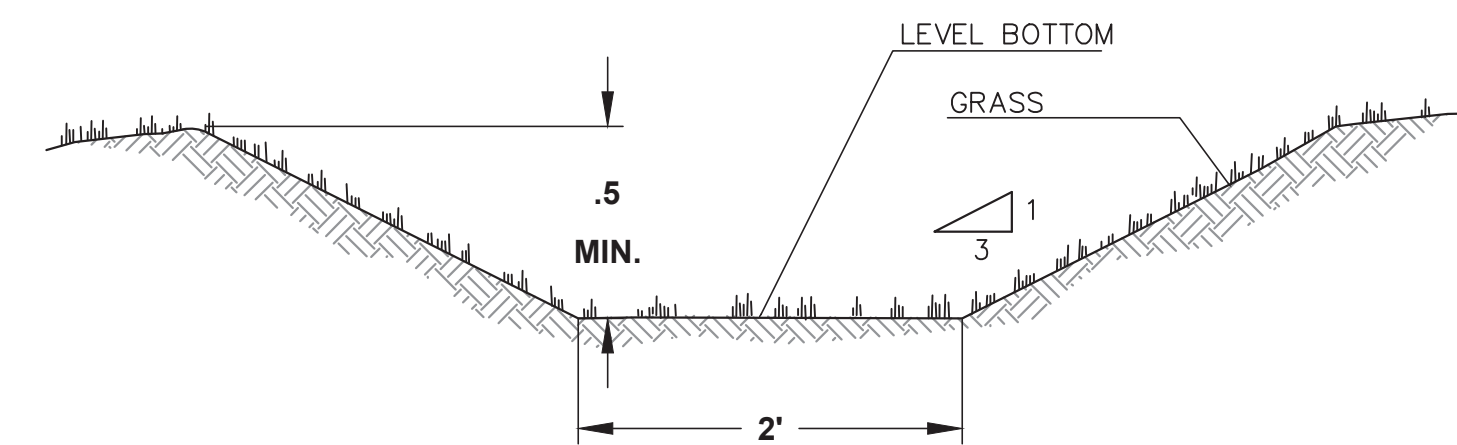


1 STABILIZED CONSTRUCTION ENTRANCE/EXIT
C5 DOE MANUAL BMP C105 N.T.S.

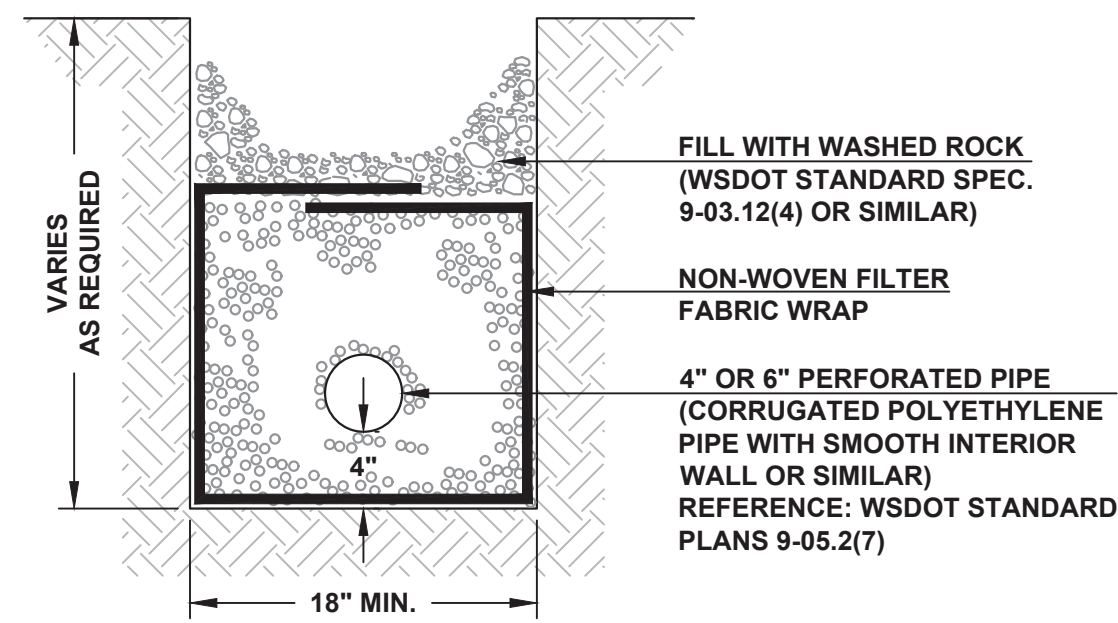


3 C5	STORMWATER FORCE MAIN DISPERSION HEADER	N.T.S.
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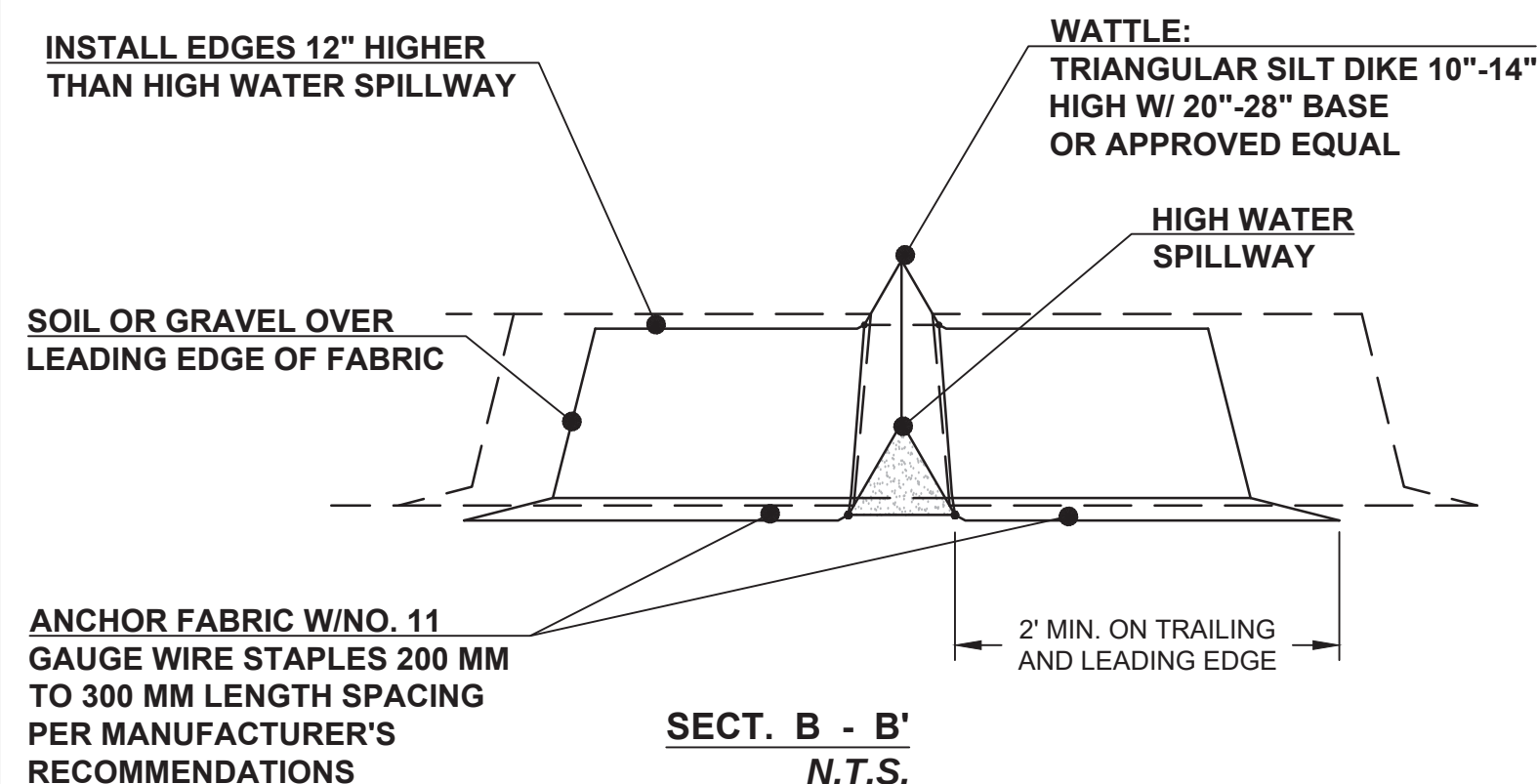
HYDROSEED TURF MIX*					
<u>BOTANICAL NAME:</u>	<u>COMMON NAME:</u>	<u>% WEIGHT</u>	<u>% PURITY</u>	<u>% GERMINATION</u>	<u>TOTAL AREA:</u>
FESTUCA ARUNDINACEA VAR.	DWARF TALL FESCUE	45	98	90	APPROX. 24,160 SF
LOLIUM PERENNE VAR. BARCLAY	DWARF PERENNIAL RYE	30	98	90	
FESTUCA RUBRA	RED FESCUE	20	98	90	
AGROSTIS TENUIS	COLONIAL BENTGRASS	5	98	90	
<u>FERTILIZER:</u>	USE SLOW RELEASE FERTILIZER 10-4-6 (N-P-K) AT A RATE OF 90 LBS PER ACRE.				
<u>MULCH:</u>	USE BONDED FIBER MATRIX AT A MINIMUM RATE OF 3,000 LBS. PER ACRE OF MULCH WITH A 10% TACKIFIER.				



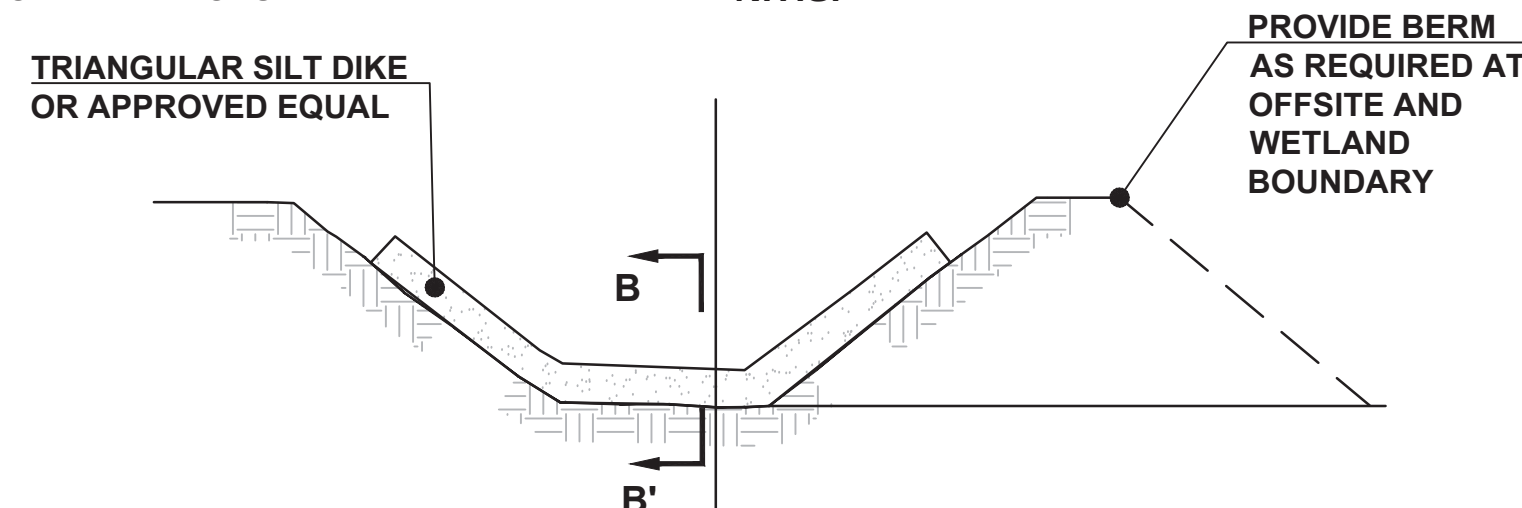
5 C5	INTERSEPTION DITCH	DOE MANUAL BMP C220	N.T.S.
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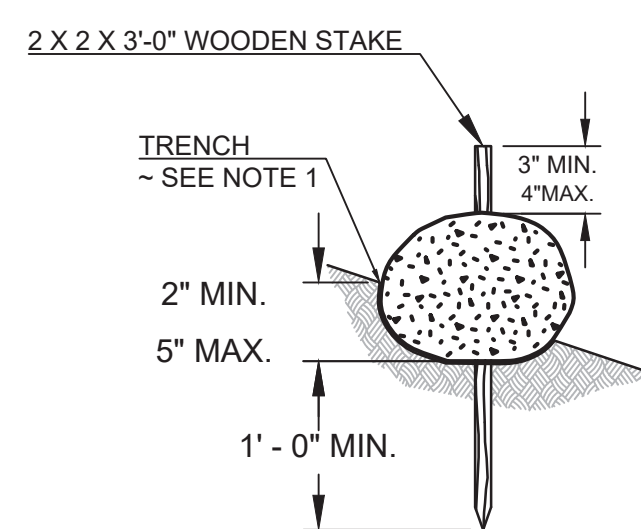
2 TEMPORARY FRENCH DRAIN
C5 N.T.S.



SECT. B - B'
N.T.S.

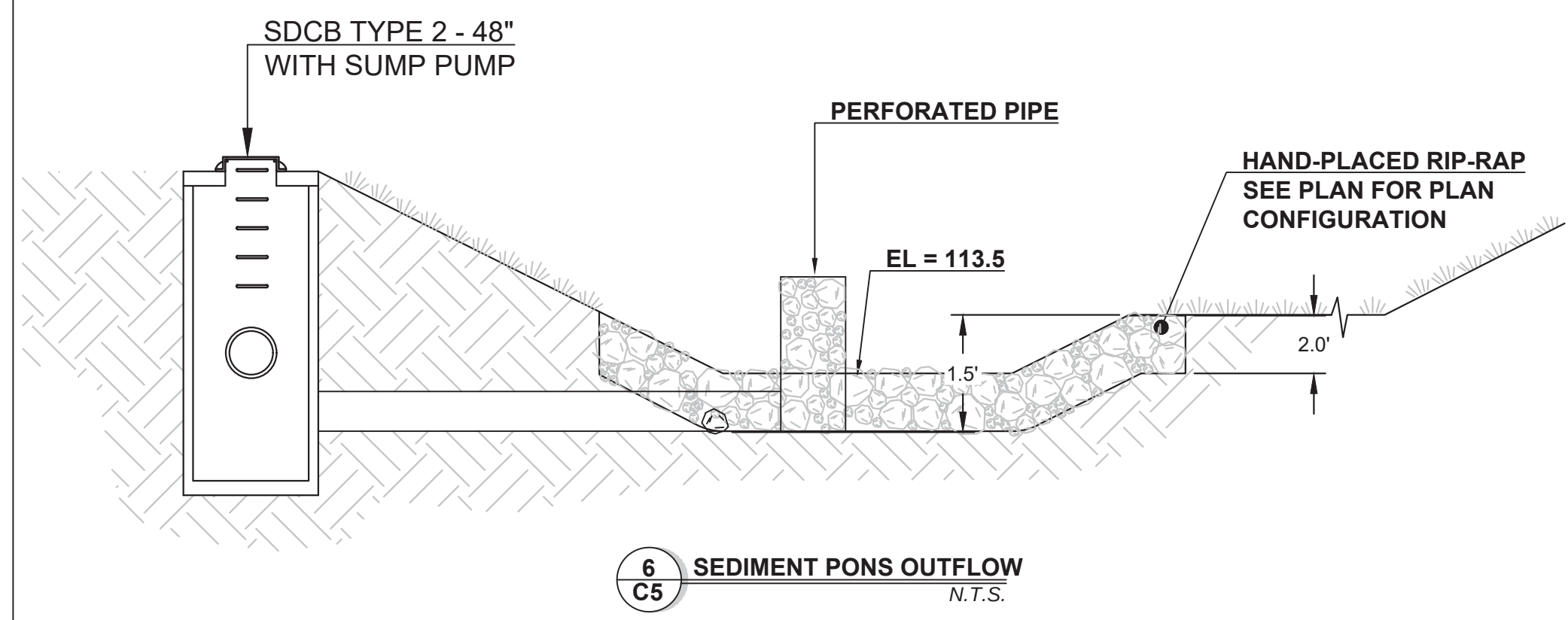


4 INTERCEPTOR DITCH AND TRIANGULAR DIKE
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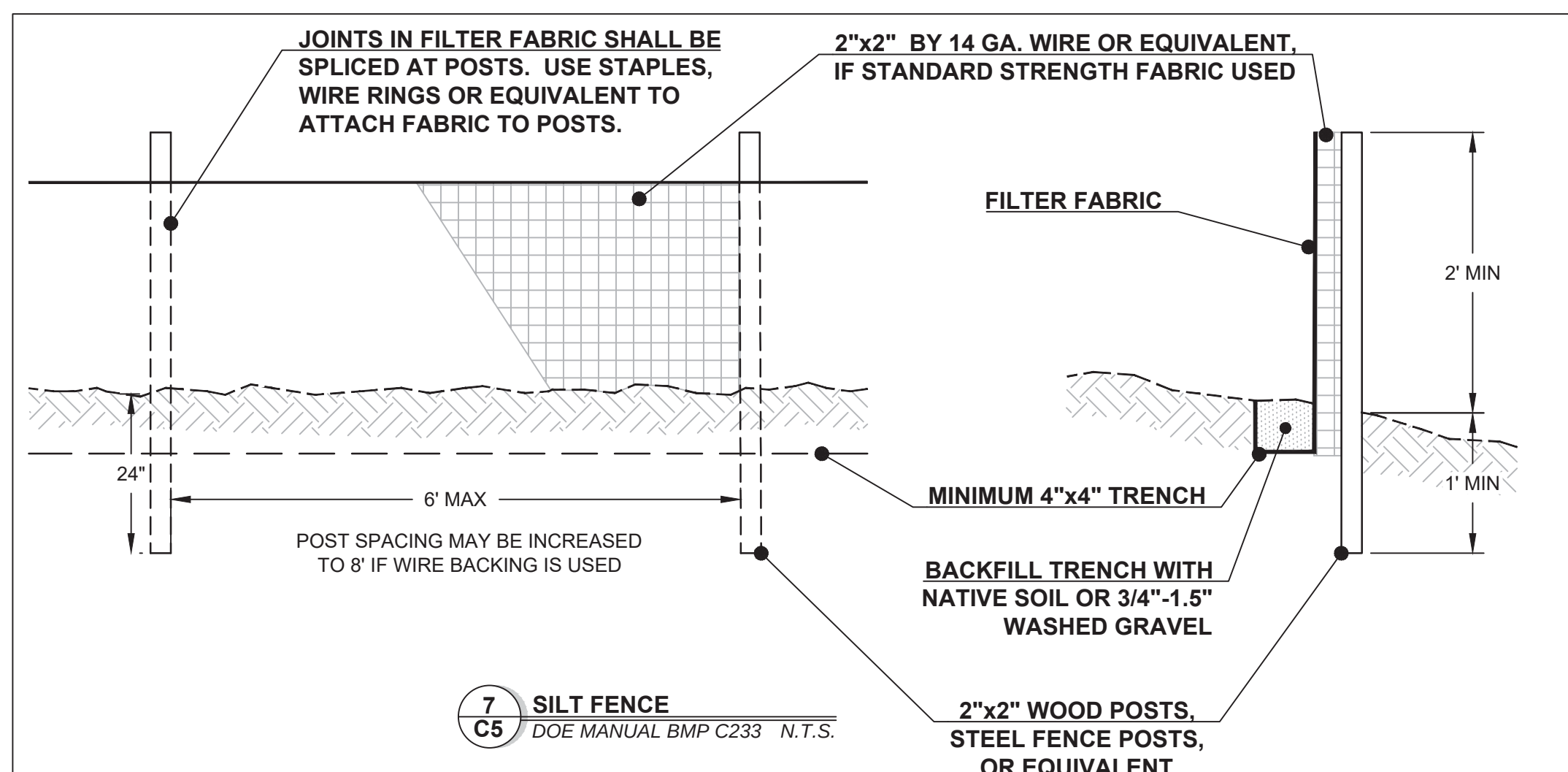


- NOTES:** REFERENCE: WSDOT STANDARD PLANS
1-30.30--00
1. WATTLES SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 9-14.5(5). INSTALL WATTLES ACROSS DITCH PERPENDICULAR TO FLOW AND IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 8-01.31(10).
 2. SECURELY KNOT EACH END OF WATTLE. ABUT ADJACENT WATTLES TIGHTLY, END TO END, WITHOUT OVERLAPPING THE ENDS.
 3. PILOT HOLES MAY BE DRIVEN THROUGH THE WATTLES AND INTO THE SOIL WHEN SOIL CONDITIONS REQUIRE.
 4. WATTLES SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RAINFALL PRODUCES RUNOFF, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.
 5. PERFORM MAINTENANCE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 8-01.31(5).

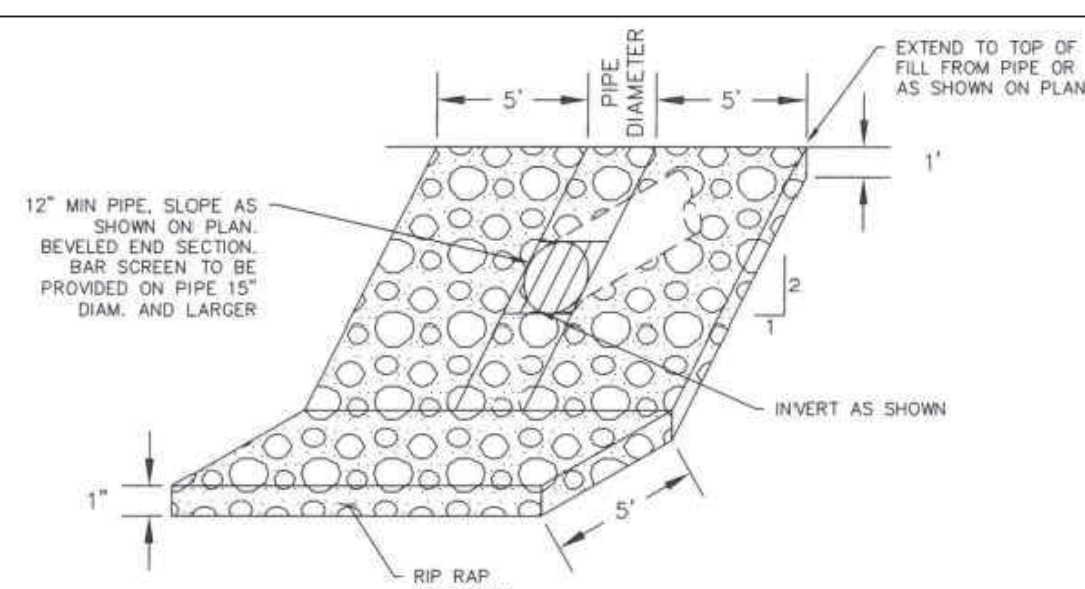
8
C5



6 SEDIMENT PONS OUTFLOW
C5 N.T.S.



7 **SILT FENCE**
C5 DOE MANUAL BMP C233 N.T.S.



NOTE:
1. THE CITY ENGINEER MAY REQUIRE THAT THE ENGINEER OF RECORD SIZE AND LOCATE SPALLS APPROPRIATELY FOR SITE SPECIFIC CONVEYANCE AND SLOPE PERCENT.

		APPROVED  _____ Public Works Director		8/11/17 _____ Date		AUGUST 4, 2017 CULVERT INLET OUTLET DETAIL STANDARD DETAIL ST-14 NOT TO SCALE	
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9
C5 CULVERT INLET/OUTLET



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S.W.P.P.P. DETAILS



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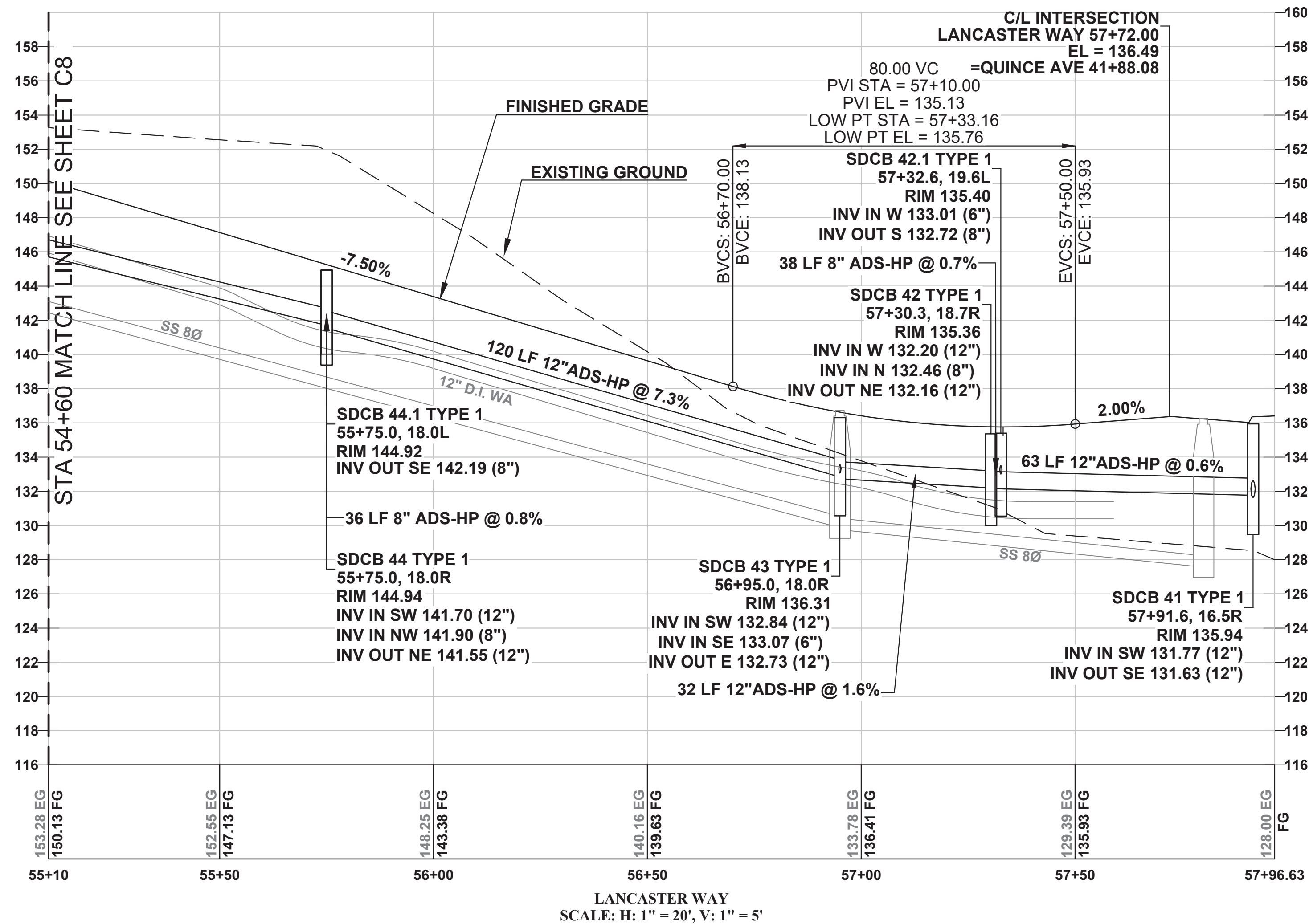
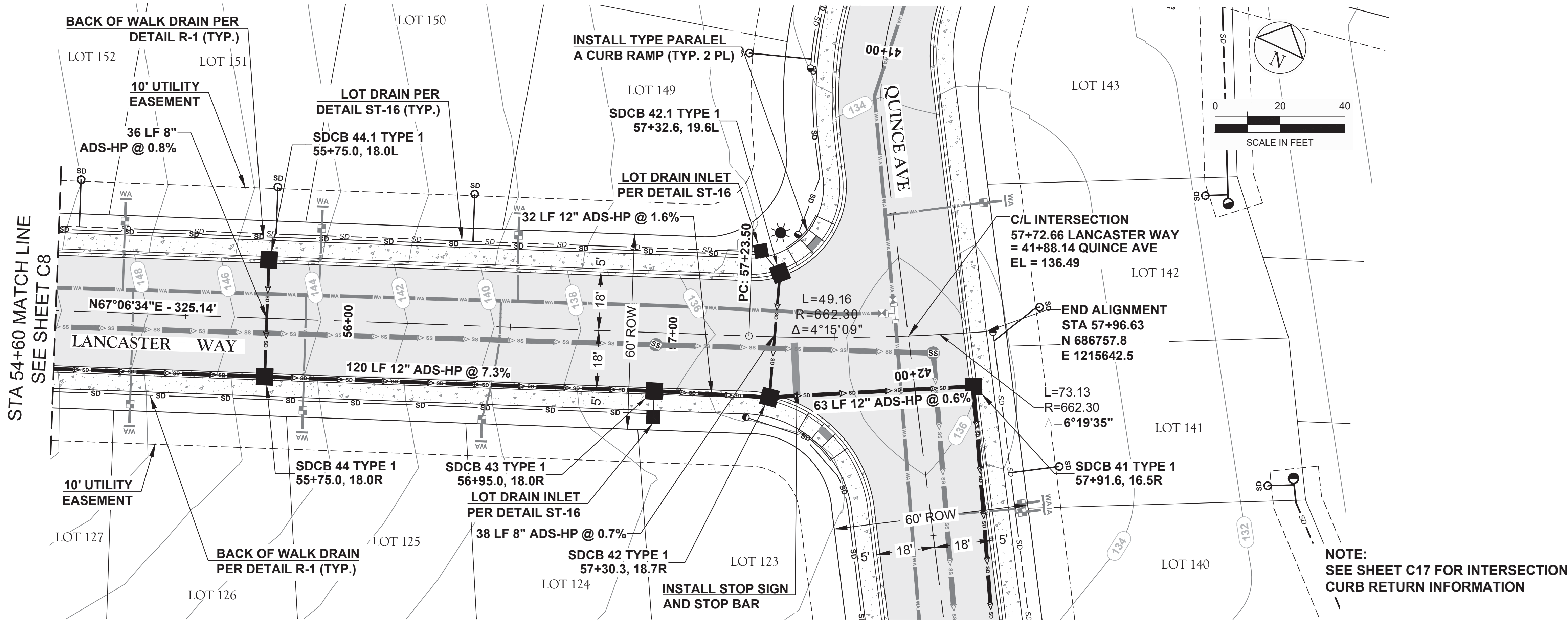
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SURVEYED 11/2019 TO 06/2020

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LANCASTER WAY STREET AND STORM



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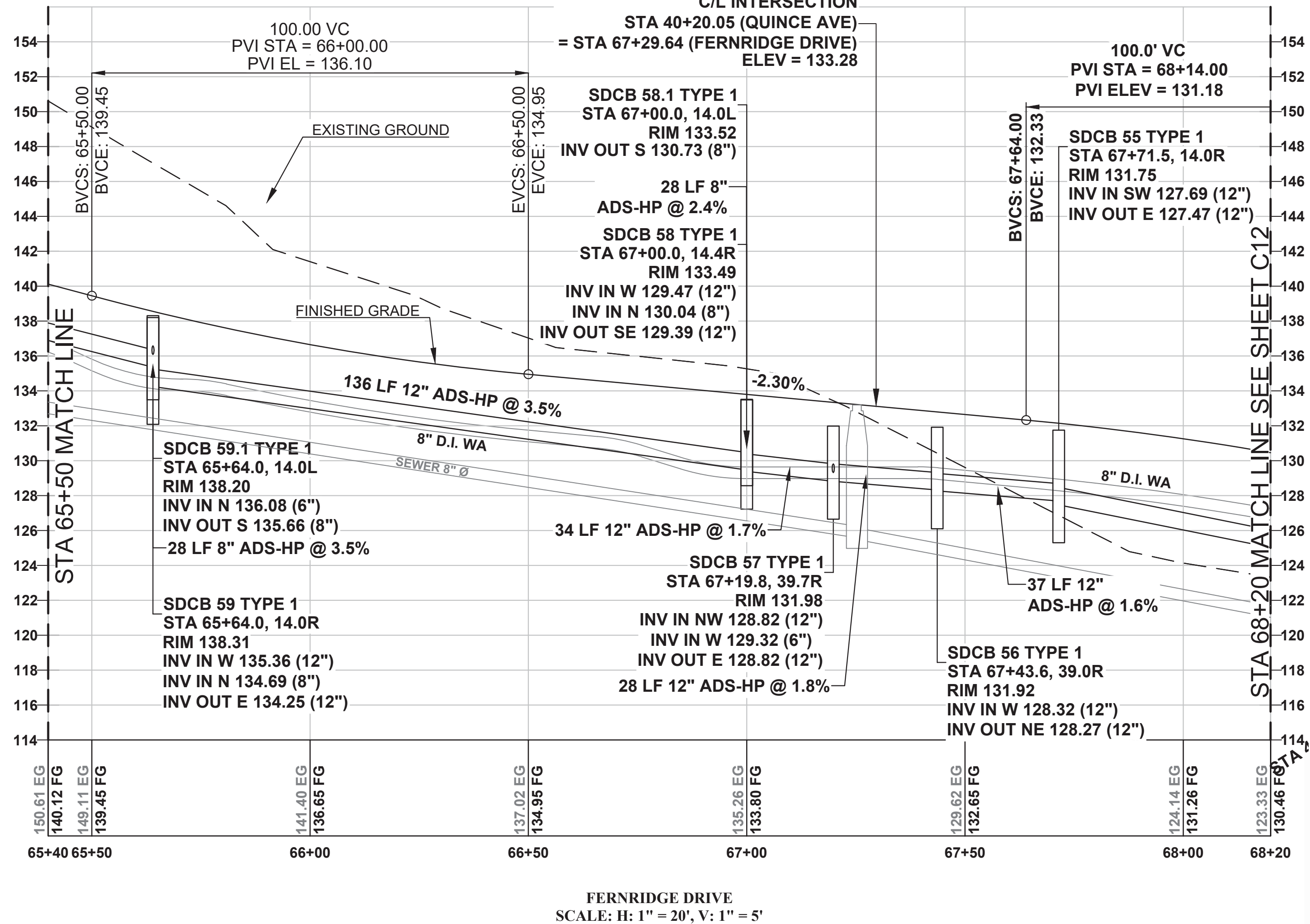
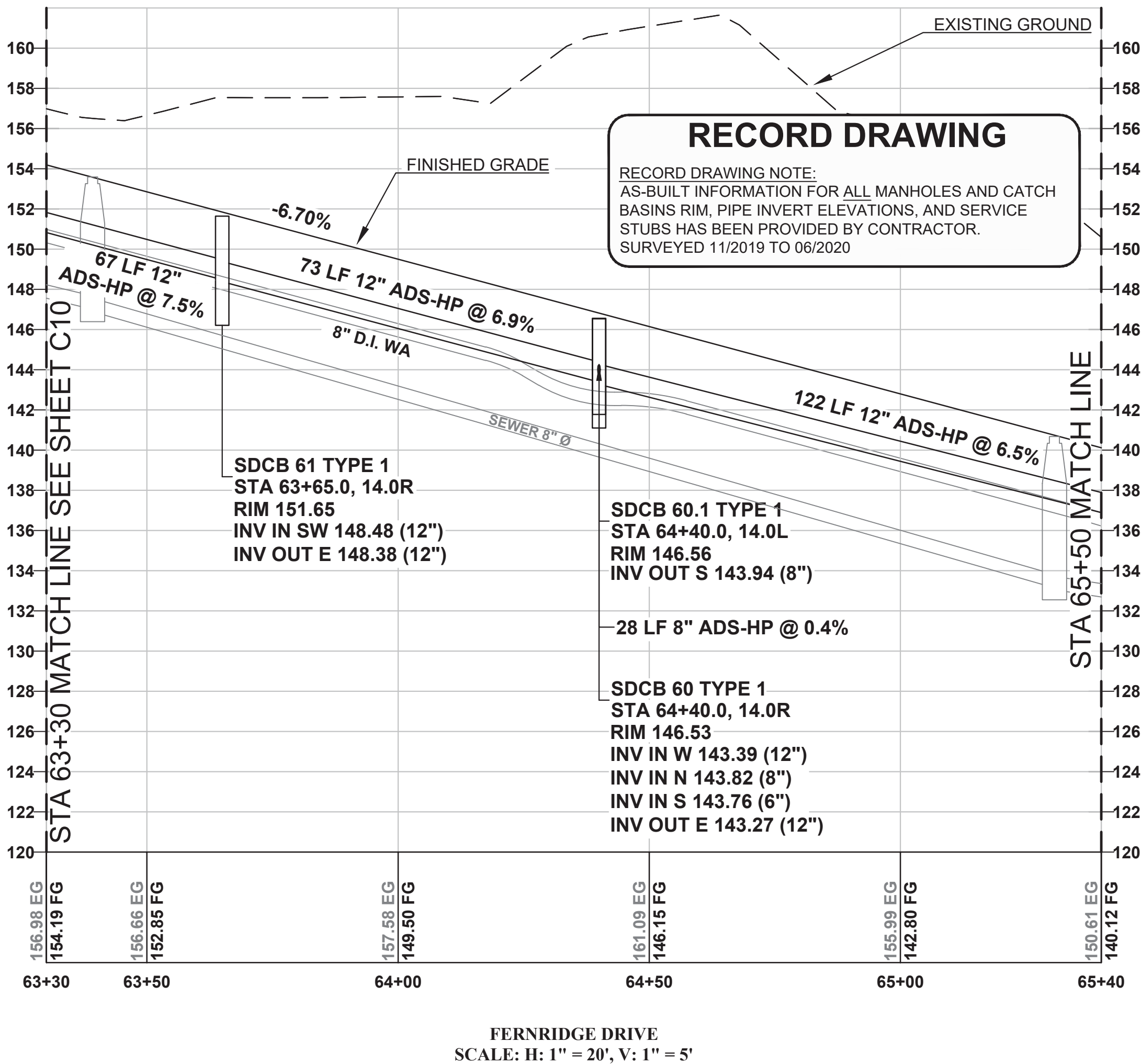
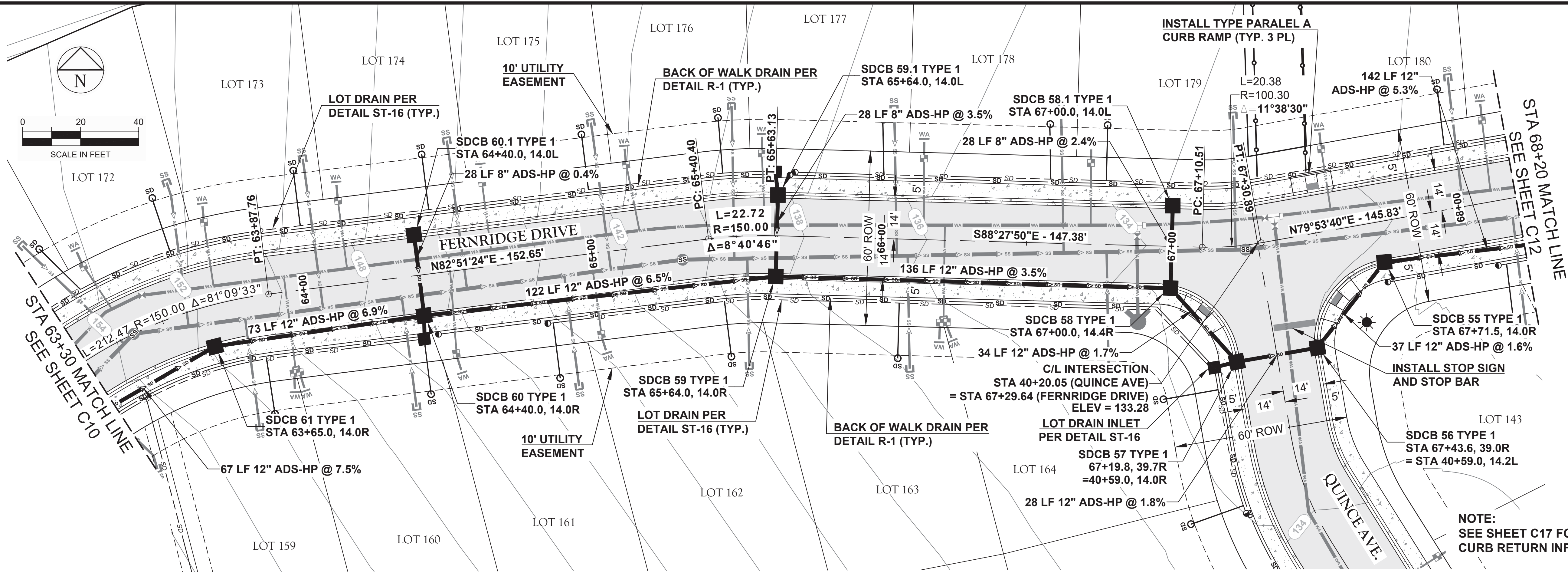
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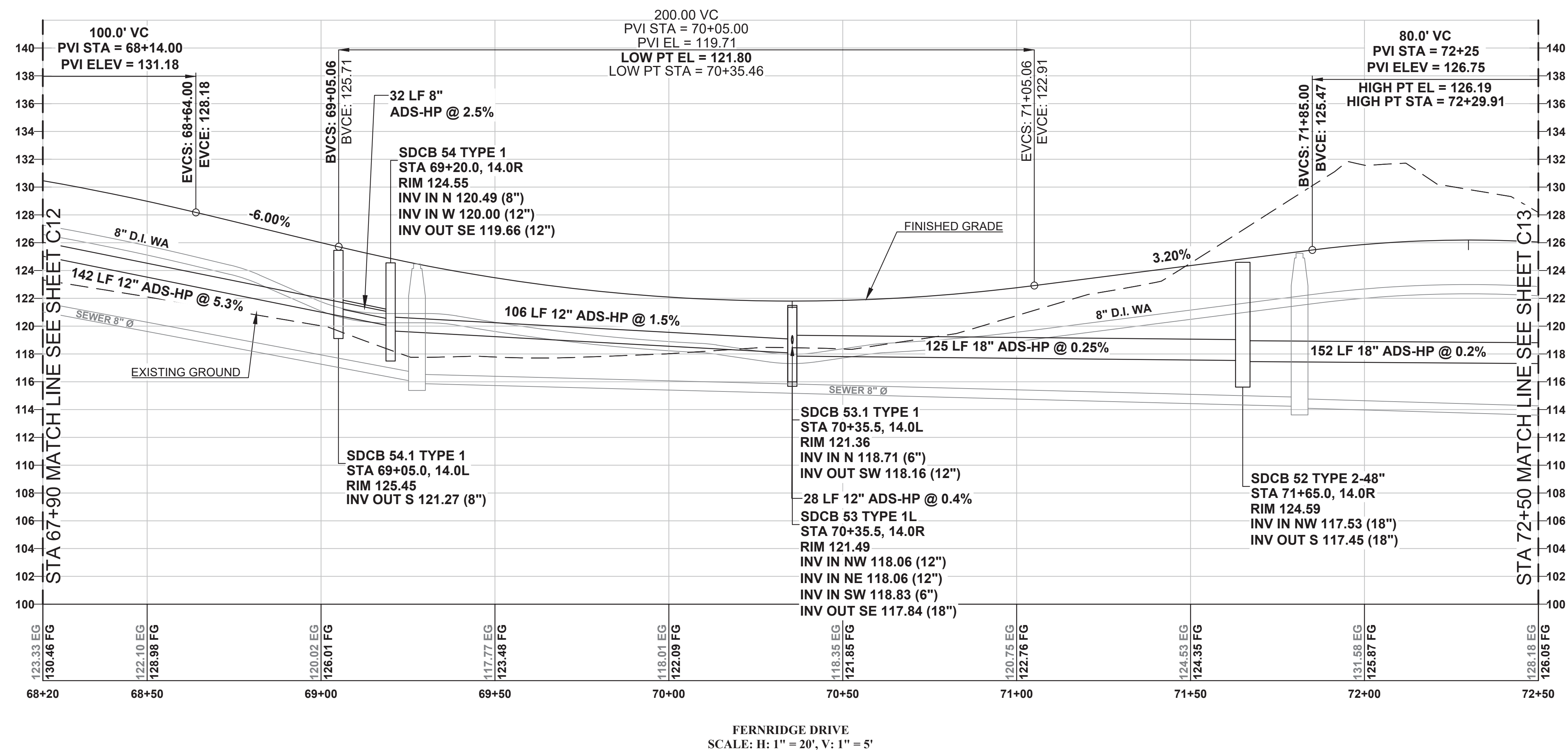
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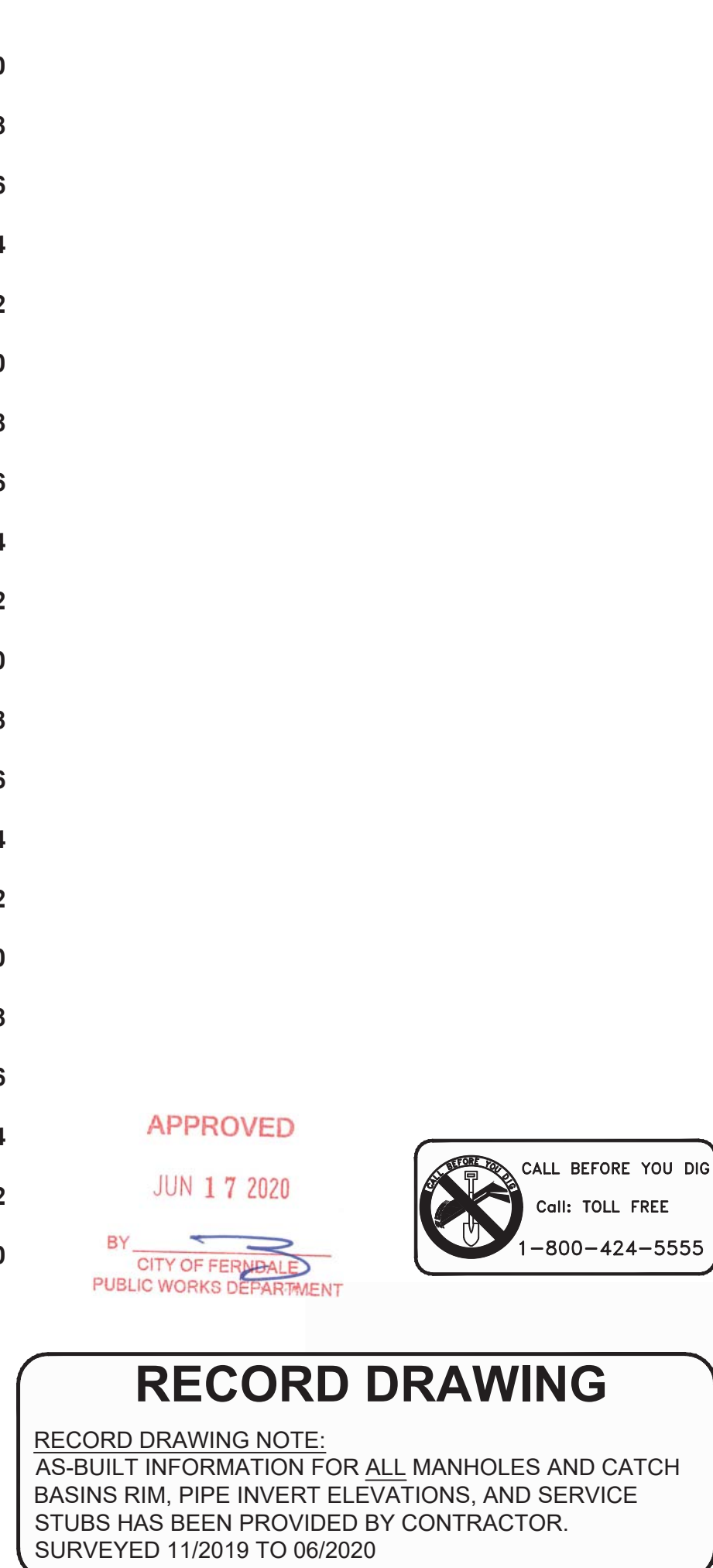
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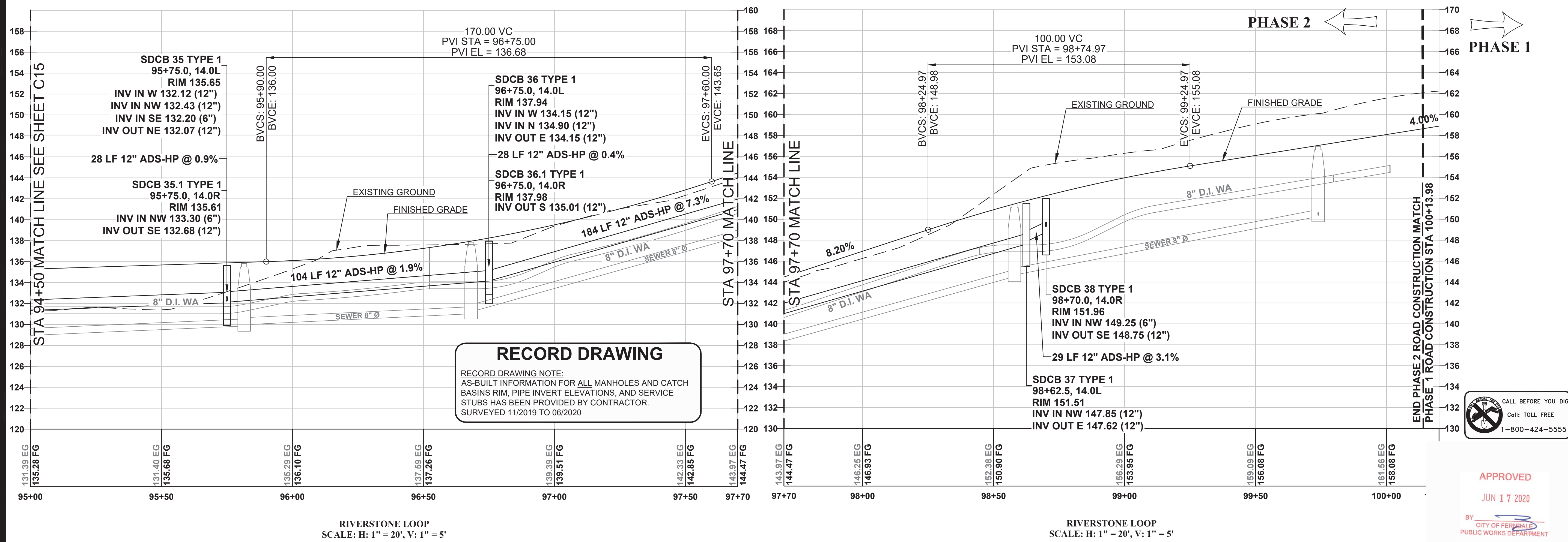
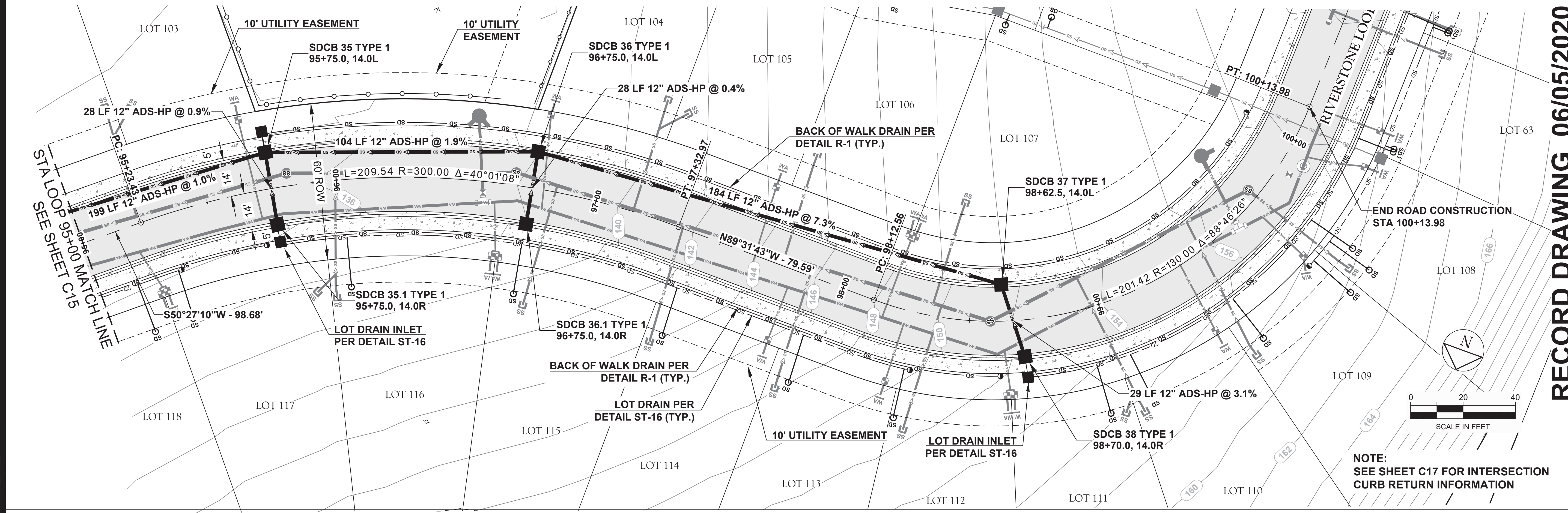
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C15

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RIVERSTONE LOOP STREET AND STORM

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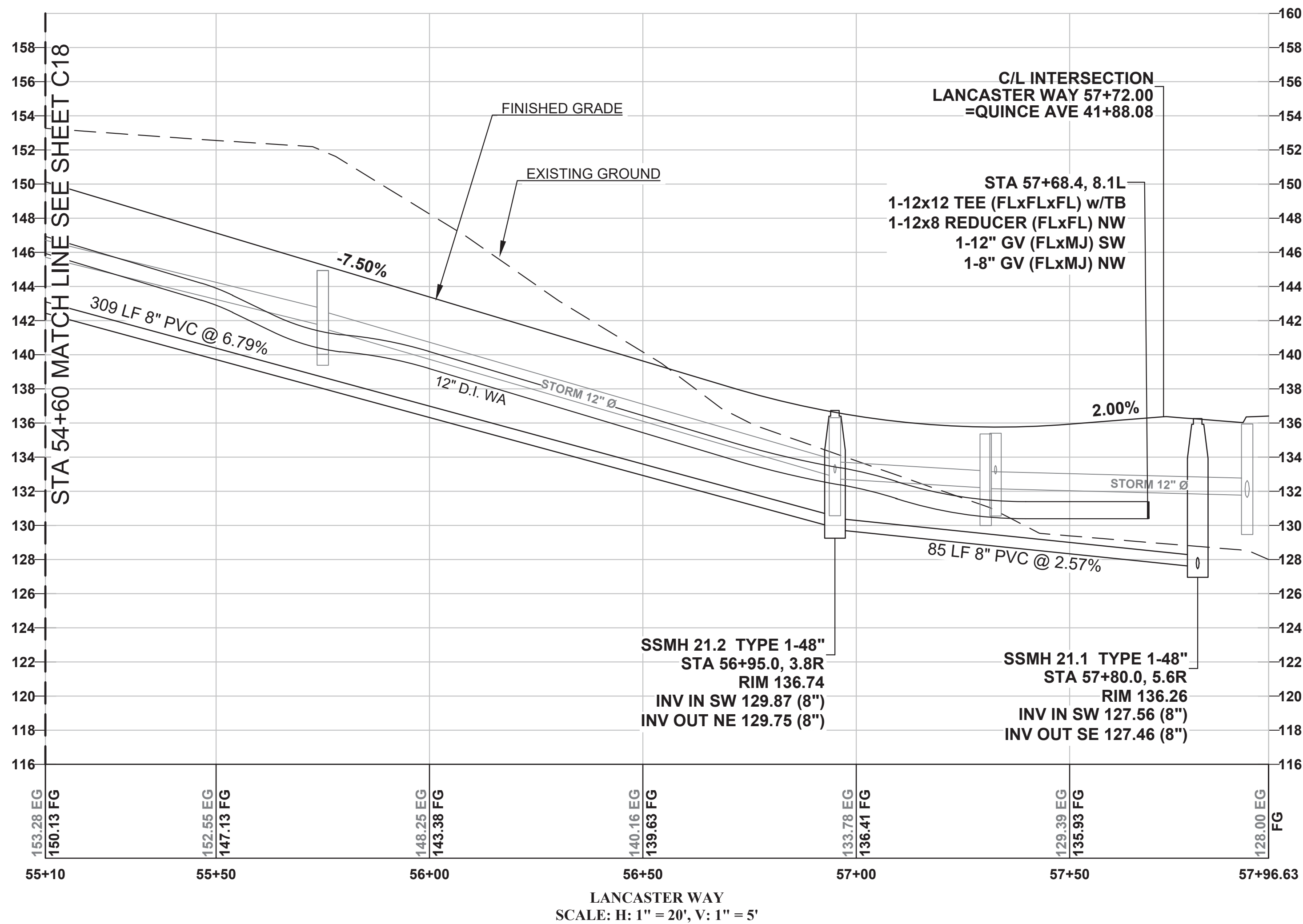
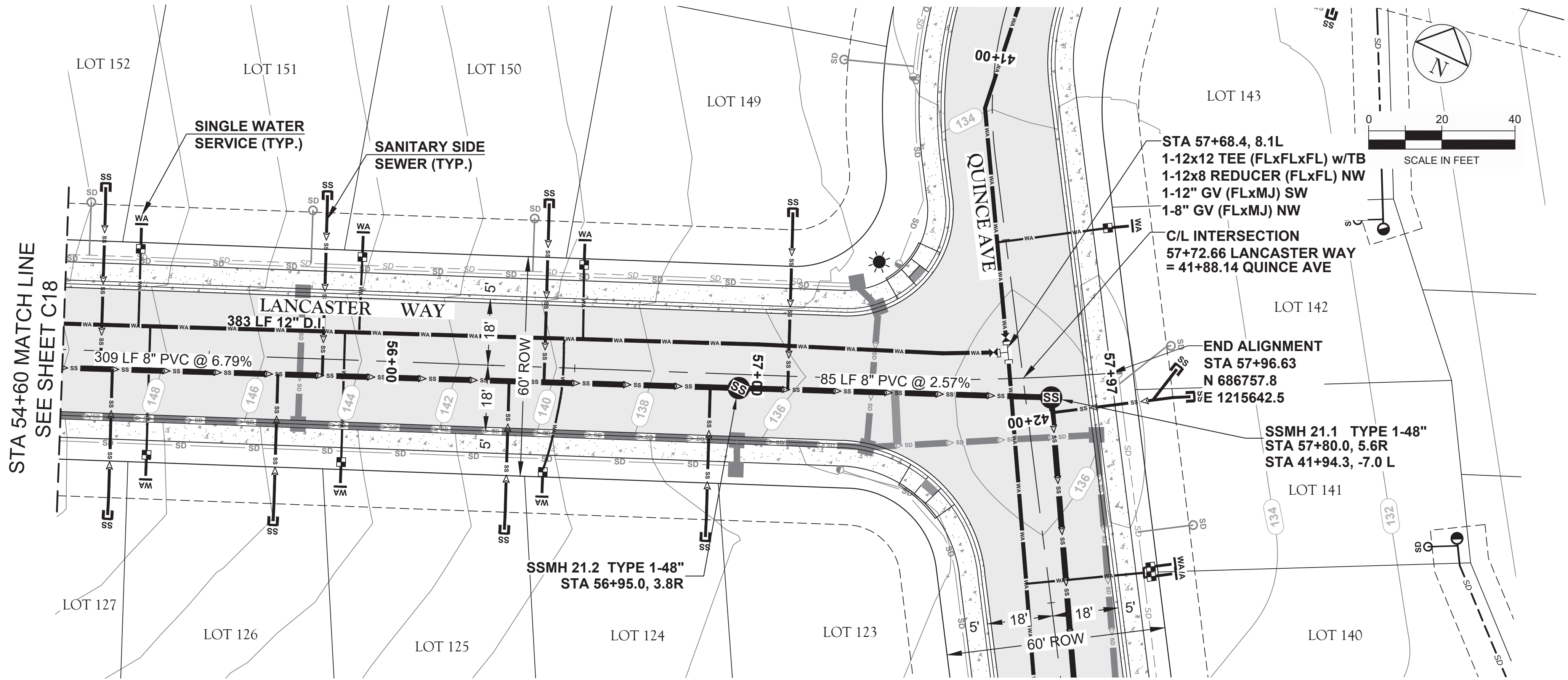
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NOTES:

- INSTALL WATER MAIN TO PROVIDE 0.75' SEPARATION FROM STORM DRAIN CROSSINGS TO MINIMIZE DEPTH AND DEFLECTION.
- ROAD RATED BOXES REQUIRED FOR WATER METERS WITHIN POTENTIAL DRIVEWAY LOCATIONS. SEE DETAIL SHEET C33.

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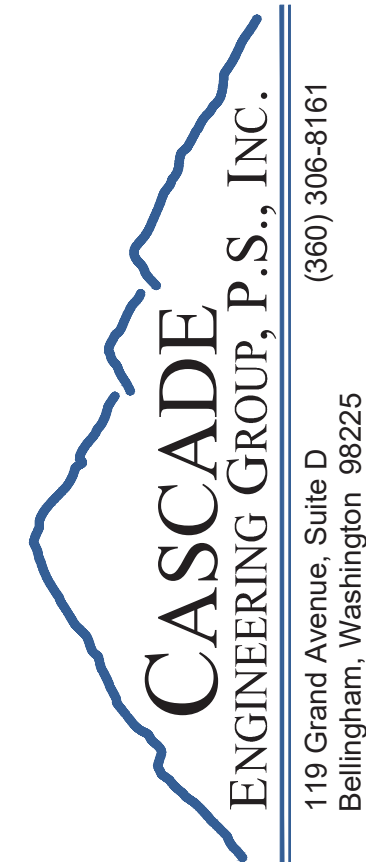
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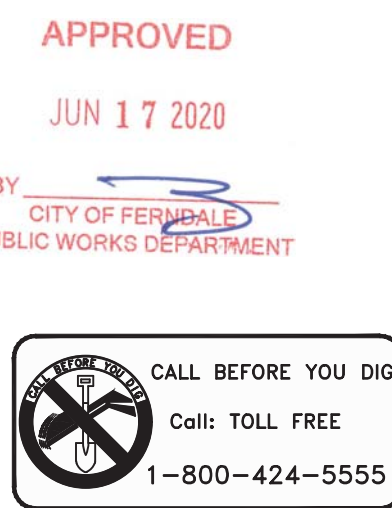
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LANCASTER WAY SEWER AND WATER

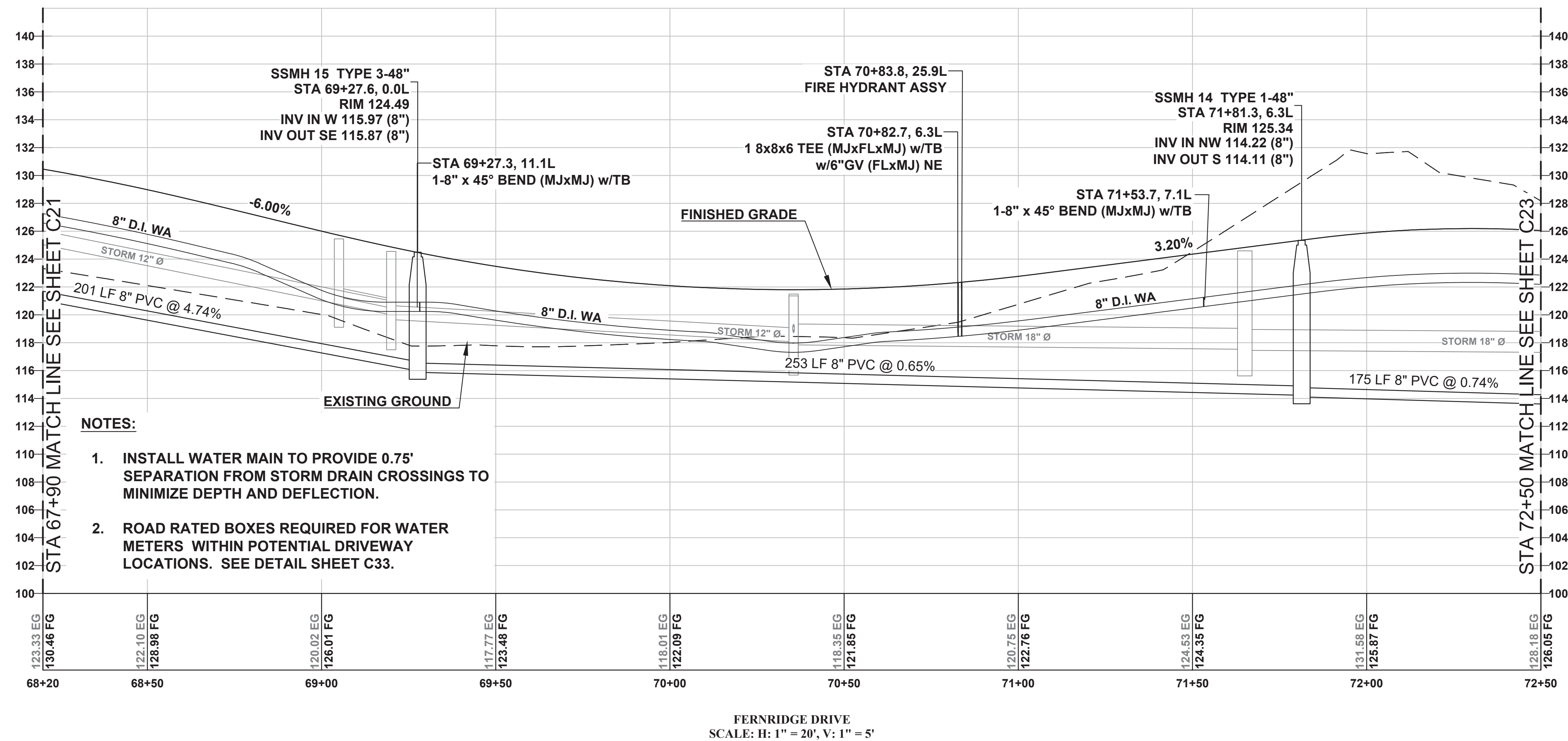


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1. **INSTALL WATER MAIN TO PROVIDE 0.75' SEPARATION FROM STORM DRAIN CROSSINGS TO MINIMIZE DEPTH AND DEFLECTION.**
2. **ROAD RATED BOXES REQUIRED FOR WATER METERS WITHIN POTENTIAL DRIVEWAY LOCATIONS. SEE DETAIL SHEET C33.**
3. **PROVIDE ADEQUATE SEPARATION FROM THE PUBLIC WATER SYSTEM UNTIL ALL REQUIRED PRESSURE TESTING AND BACTERIAL TESTING IS COMPLETE. CONTACT THE CITY INSPECTOR FOR TESTING AND CONNECTION PROCEDURES.**

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SHEET NO.

C24

OF



CASCADE
ENGINEERING GROUP, P.S., INC.

119 Grand Avenue, Suite D
Bellingham, Washington 98225
(360) 306-8161

REVISIONS	DATE
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DATE: 06/05/2020	
DESIGN:	
DRAWN:	LCP
CHECKED:	
SCALE: AS SHOWN	
PROJECT NUMBER:	

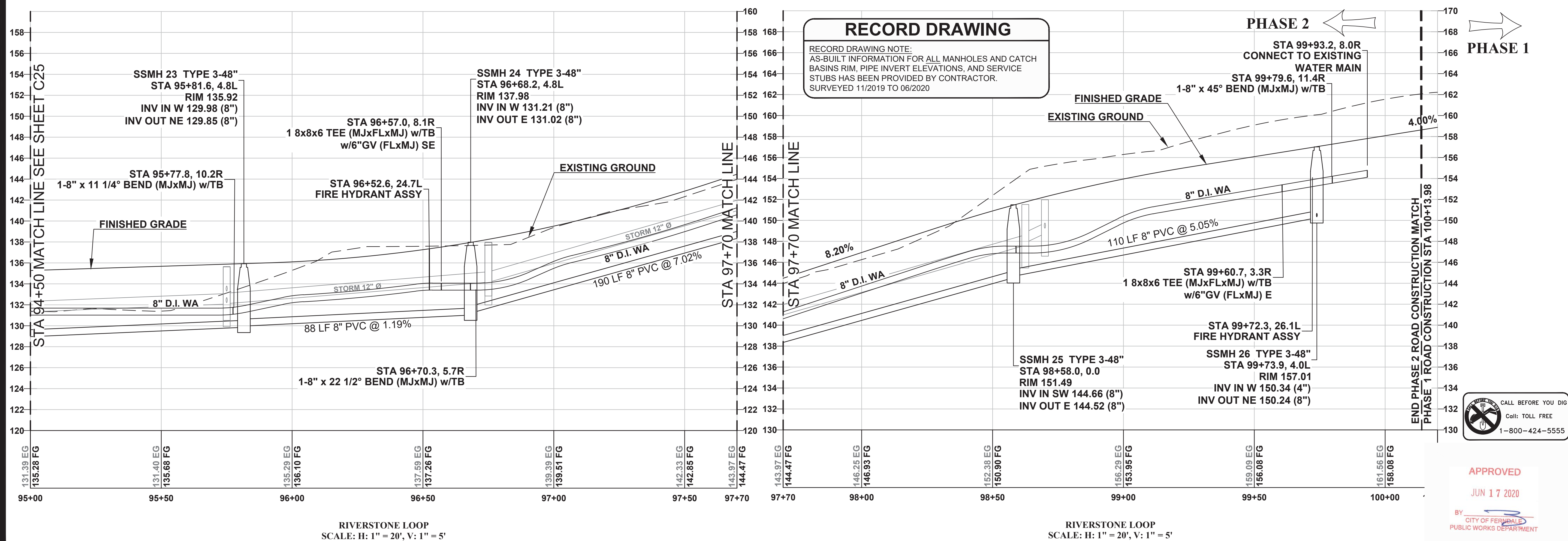
MDGX0001

SHEET NO.

C25

OF

1. **INSTALL WATER MAIN TO PROVIDE 0.75' SEPARATION FROM STORM DRAIN CROSSINGS TO MINIMIZE DEPTH AND DEFLECTION.**
2. **ROAD RATED BOXES REQUIRED FOR WATER METERS WITHIN POTENTIAL DRIVEWAY LOCATIONS. SEE DETAIL SHEET C33.**
3. **PROVIDE ADEQUATE SEPARATION FROM THE PUBLIC WATER SYSTEM UNTIL ALL REQUIRED PRESSURE TESTING AND BACTERIAL TESTING IS COMPLETE. CONTACT THE CITY INSPECTOR FOR TESTING AND CONNECTION PROCEDURES.**



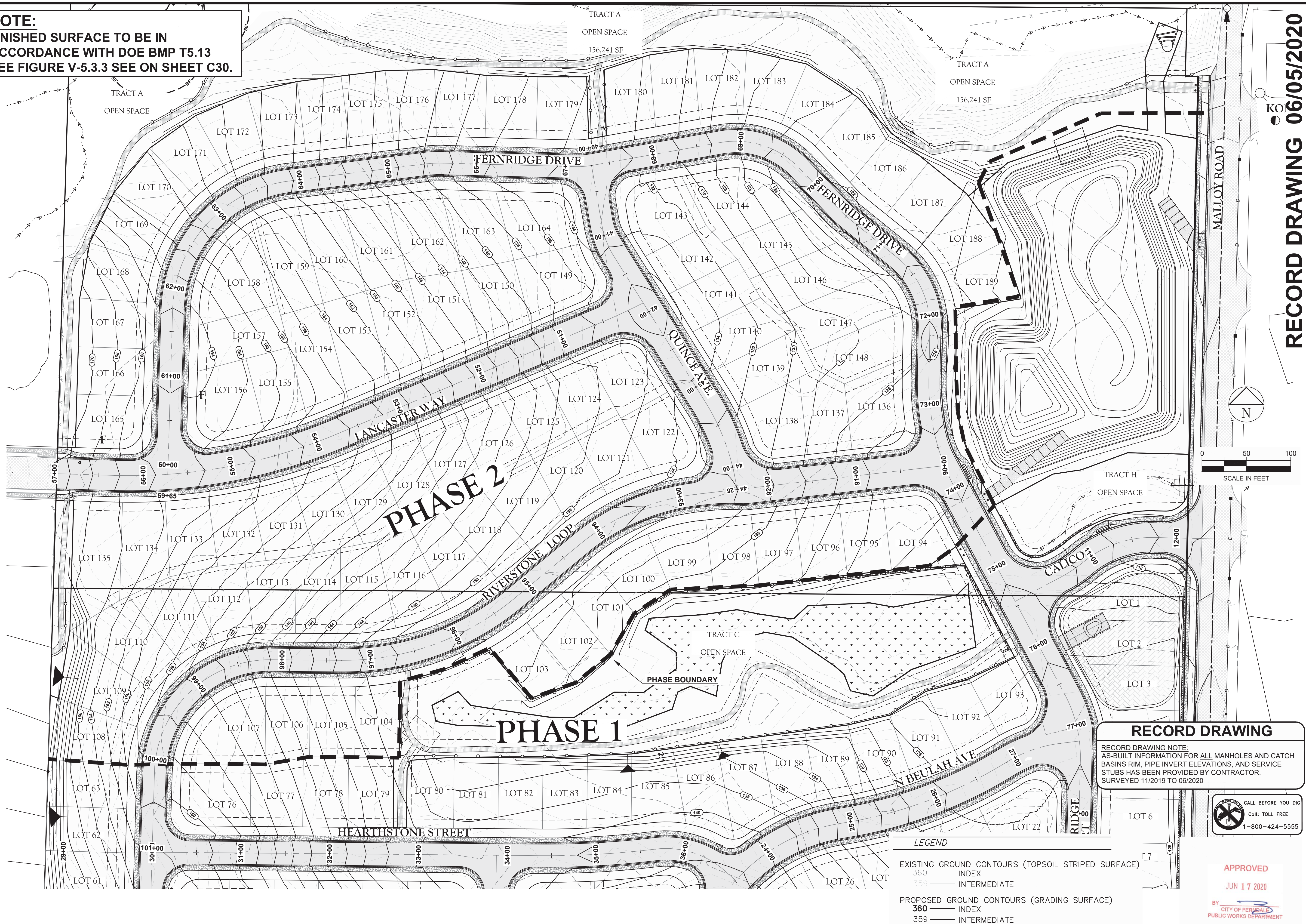
MDGX0001

SHEET NO.

C26

OF

NOTE:
FINISHED SURFACE TO BE IN
ACCORDANCE WITH DOE BMP T5.13
SEE FIGURE V-5.3.3 SEE ON SHEET C30.



RECORD DRAWING 06/05/2020

FERNDALE, WASHINGTON
MALLOY TERRACE PUD
PHASE 2 GRADING PLANS
PHASE 2 GRADING



CASCADE
ENGINEERING GROUP, P.S., INC.
119 Grand Avenue, Suite D (360) 306-8161

Bellingham, Washington 98225

REVISIONS	DATE
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DATE: 06/05/2020
DESIGN: CRP
DRAWN: LCP
CHECKED: _____

SCALE: AS SHOWN

PROJECT NUMBER: _____

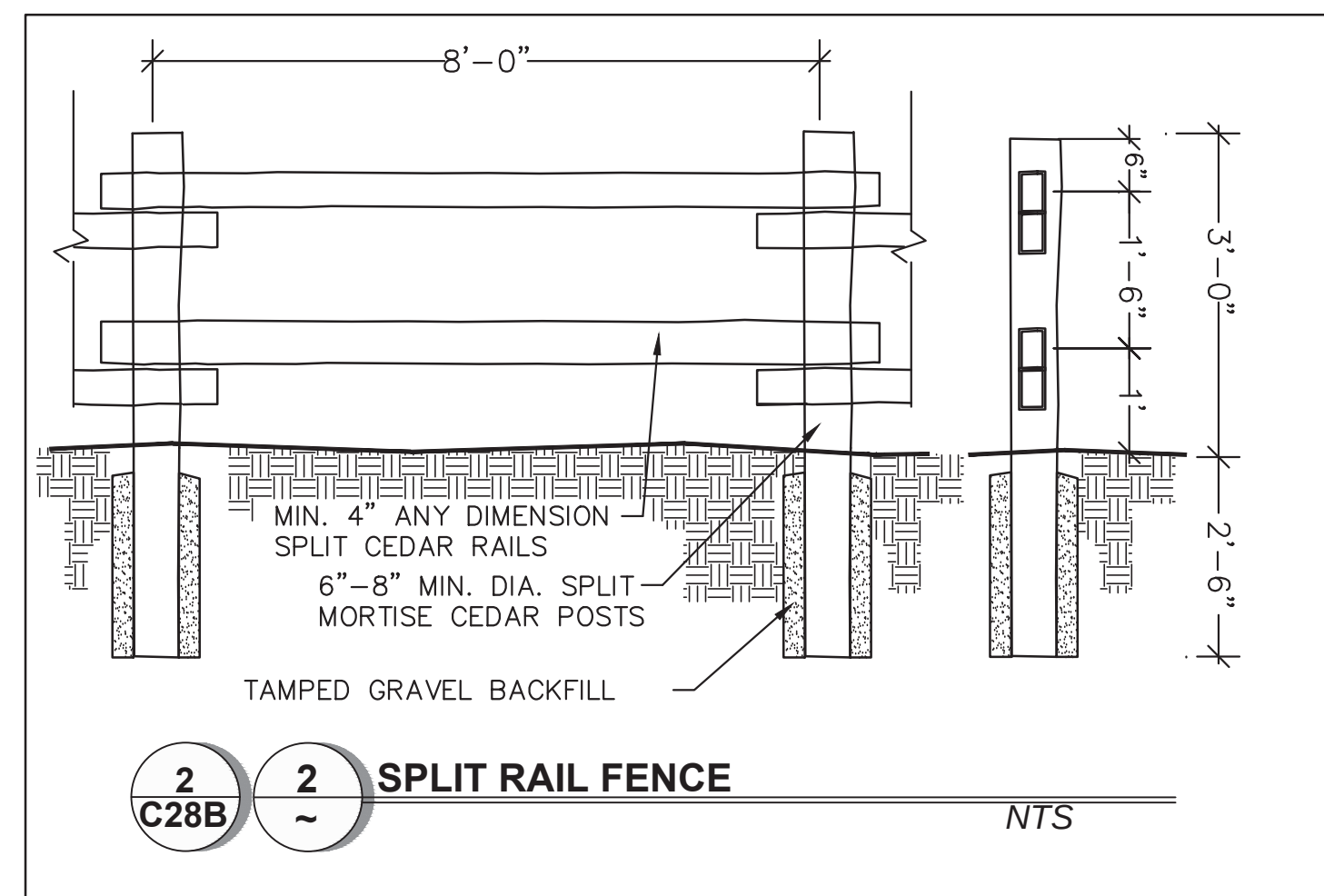
MDGX0001

SHEET NO.

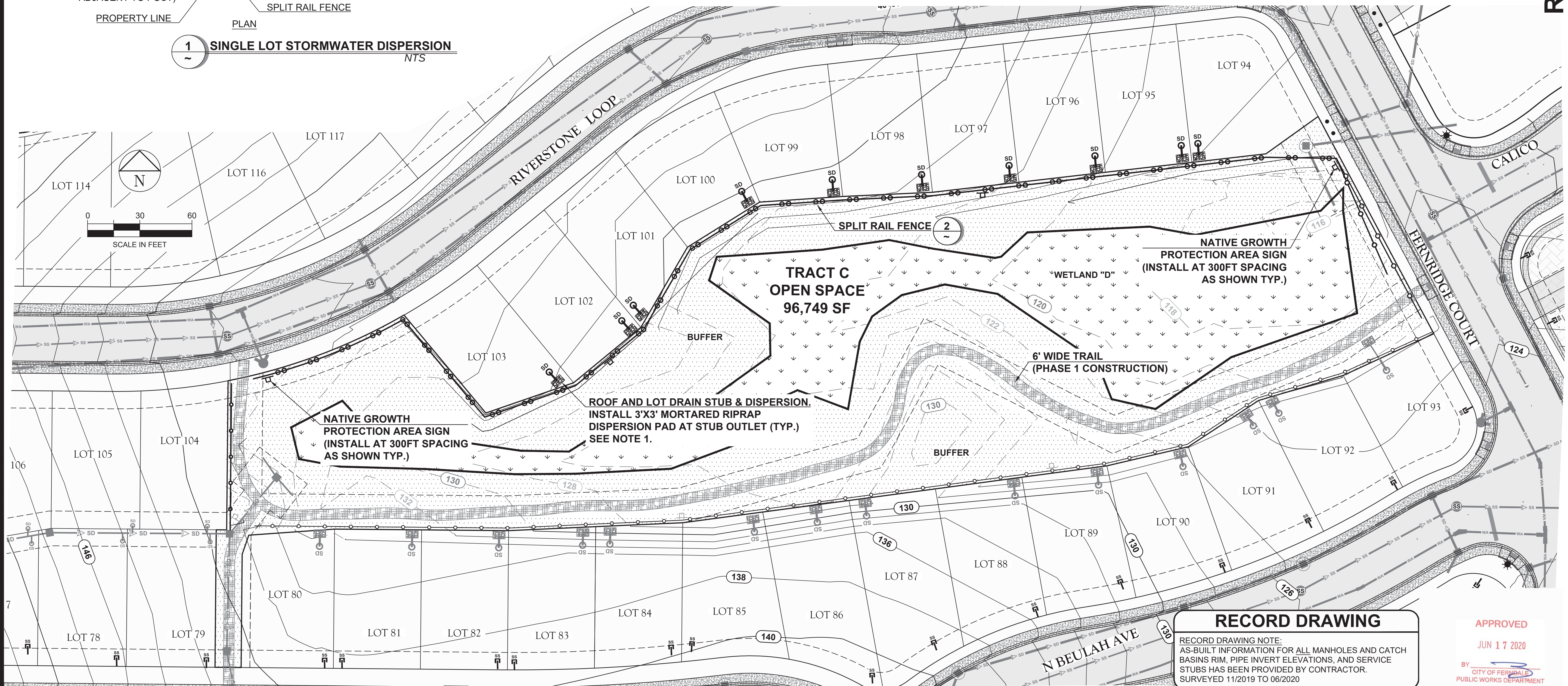
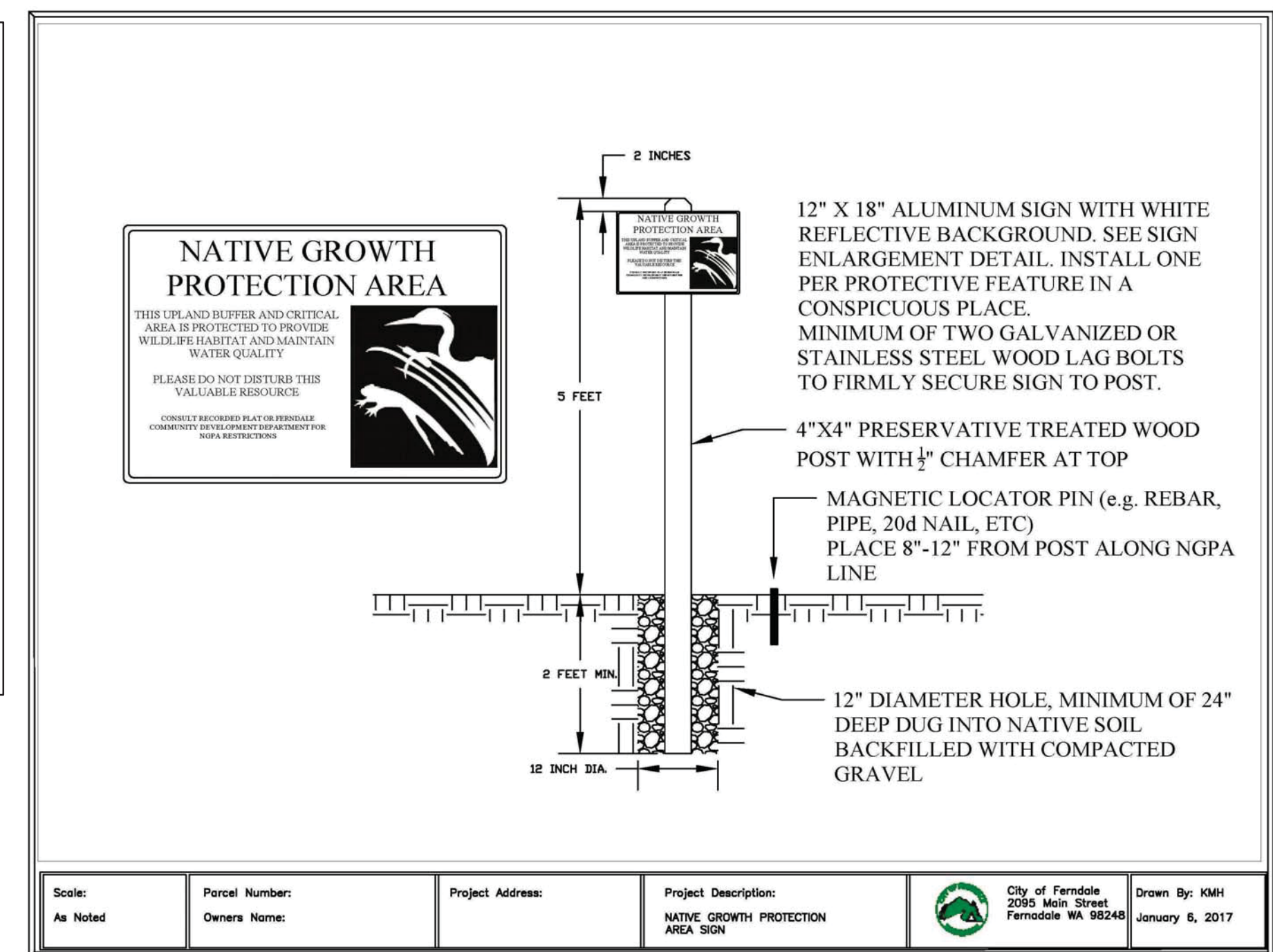
C27

OF

06/04/2020 5:03PM P:\M\MDGX001\0400CAD\DWG\Sheets\PHASE 2 CONSTRUCTION PLANS\Record Drawings\C27-PHASE2 GRADING-REC.dwg



NOTE:
SEE SHEET C28B FOR ALL SITE TRAIL AND FENCE LAYOUT.



RECORD DRAWING NOTE:
AS-BUILT INFORMATION FOR ALL MANHOLES AND CATCH
BASINS RIM, PIPE INVERT ELEVATIONS, AND SERVICE
STUBS HAS BEEN PROVIDED BY CONTRACTOR.
SURVEYED 11/2019 TO 06/2020

BY _____
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT



CASCADE
ENGINEERING GROUP, P.S., INC.

1119 Grand Avenue, Suite D
Bellingham, Washington 98225
(360) 306-8161

REVISIONS	DATE
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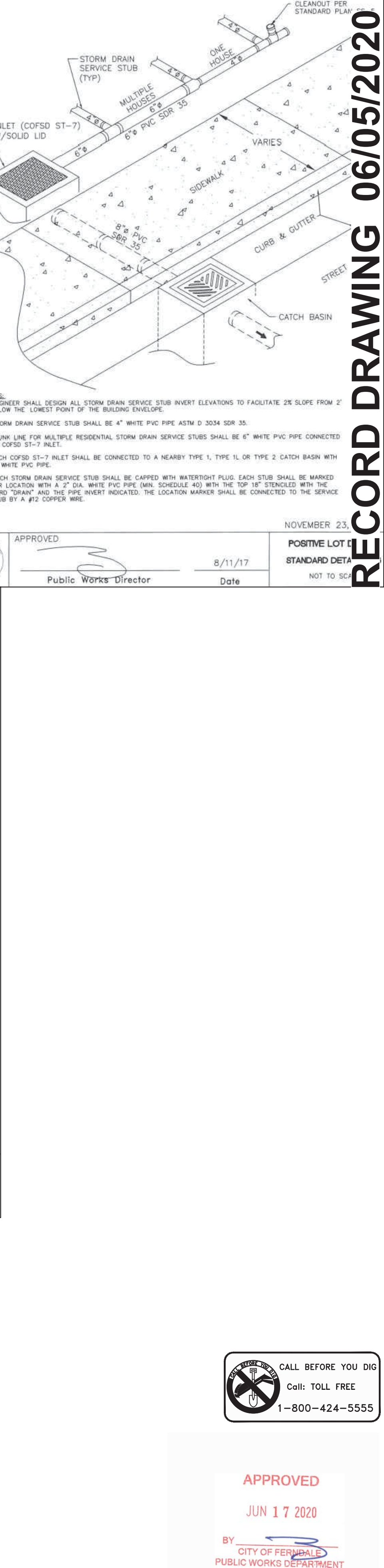
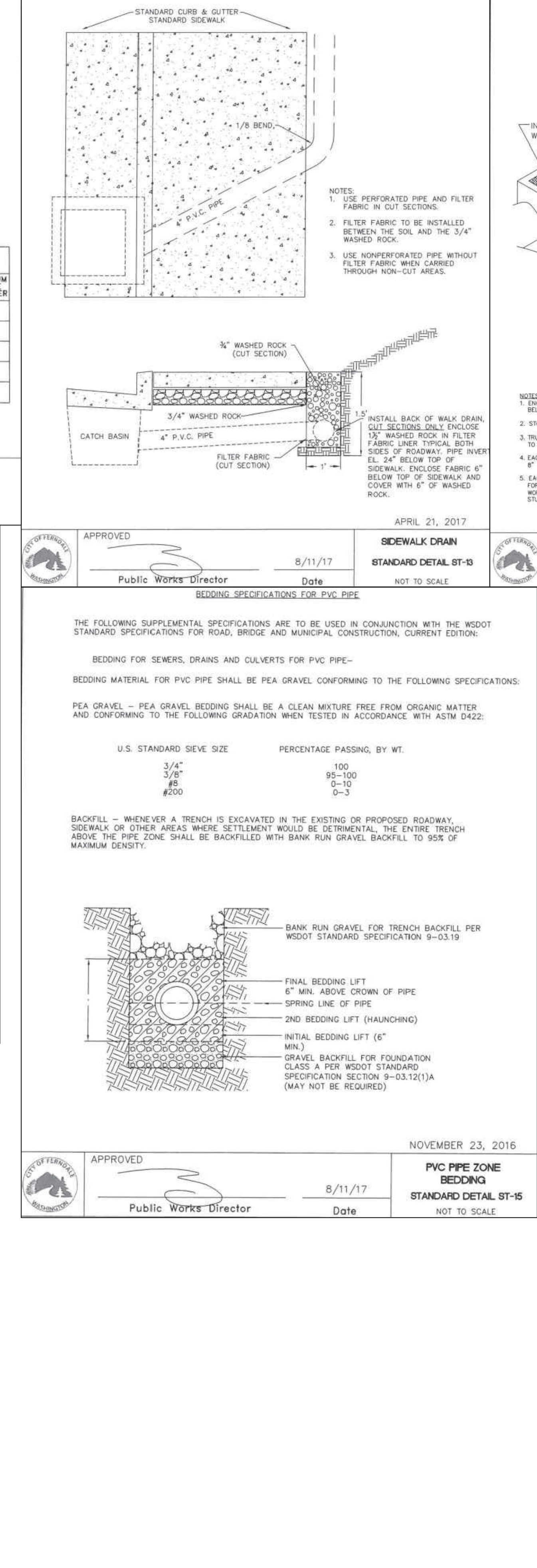
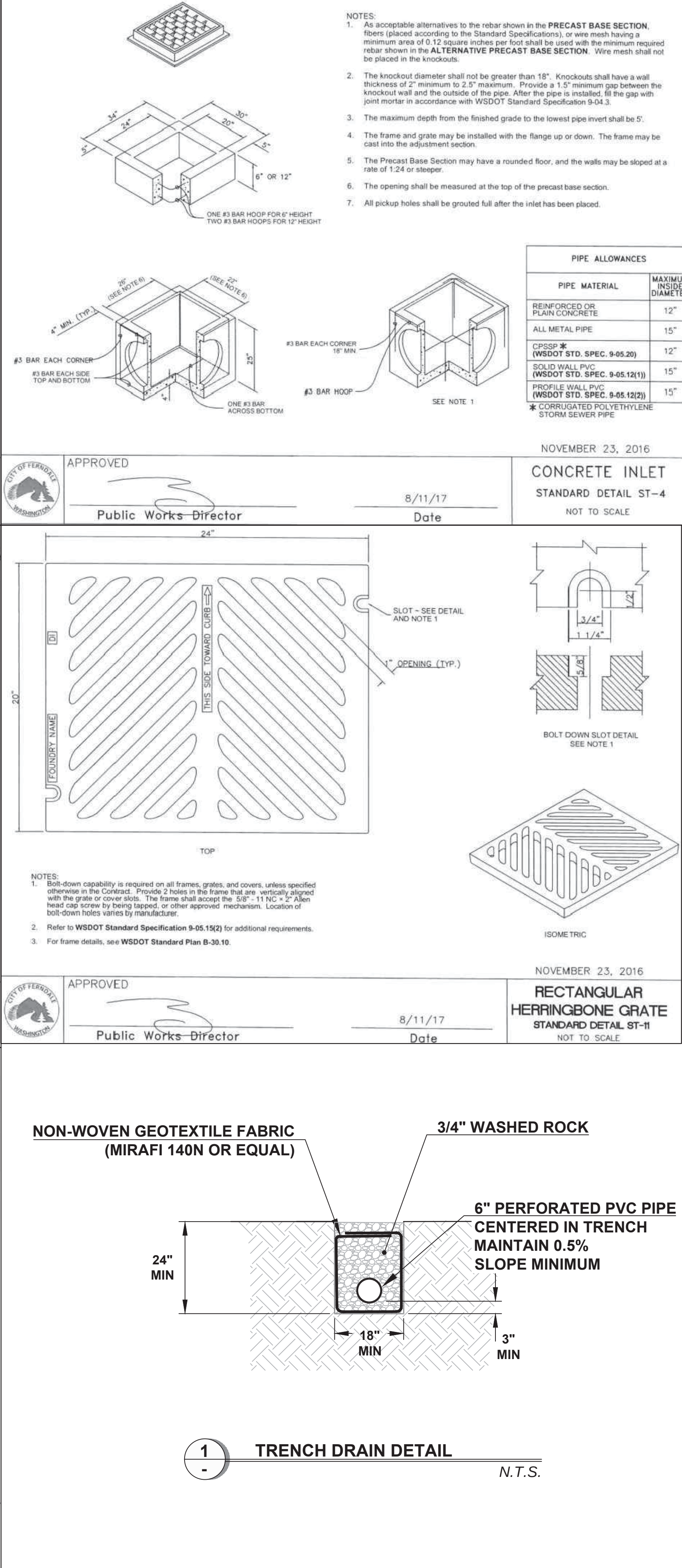
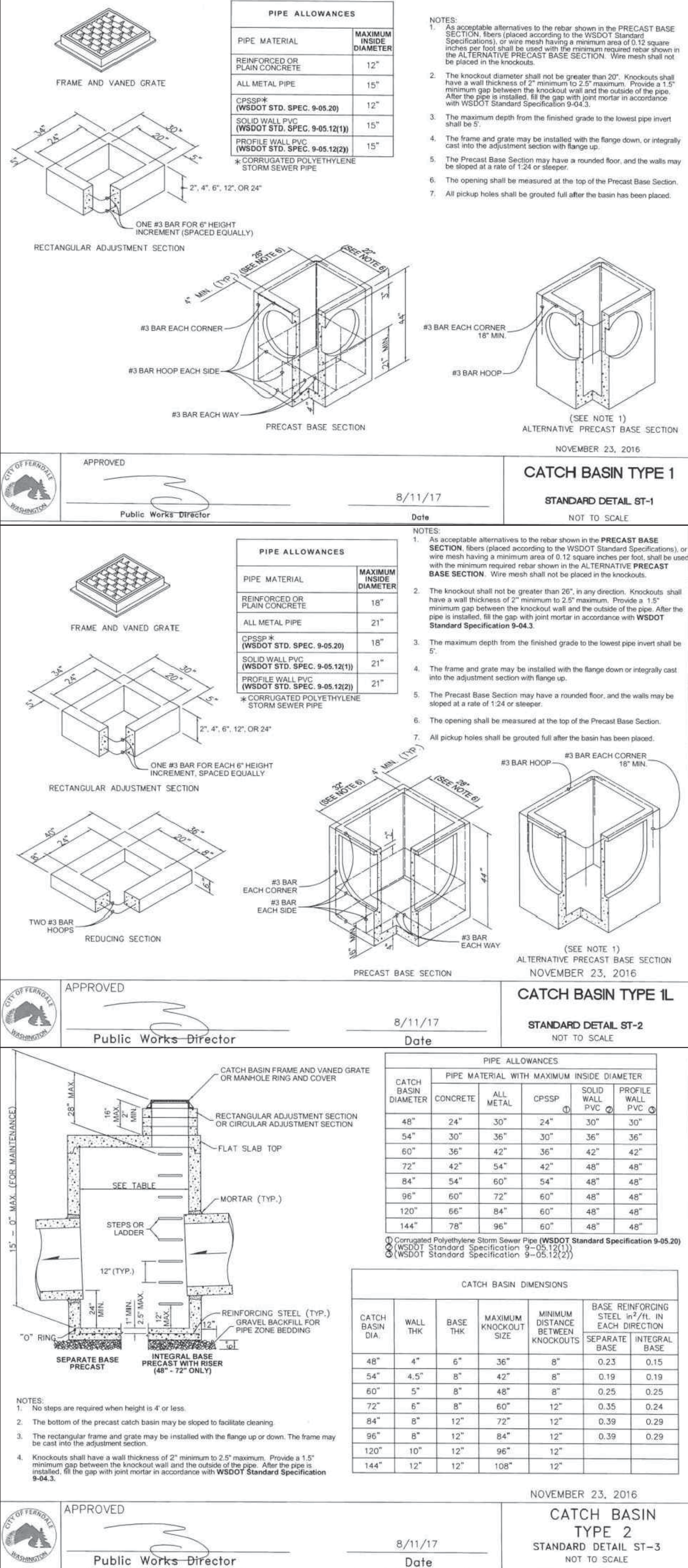
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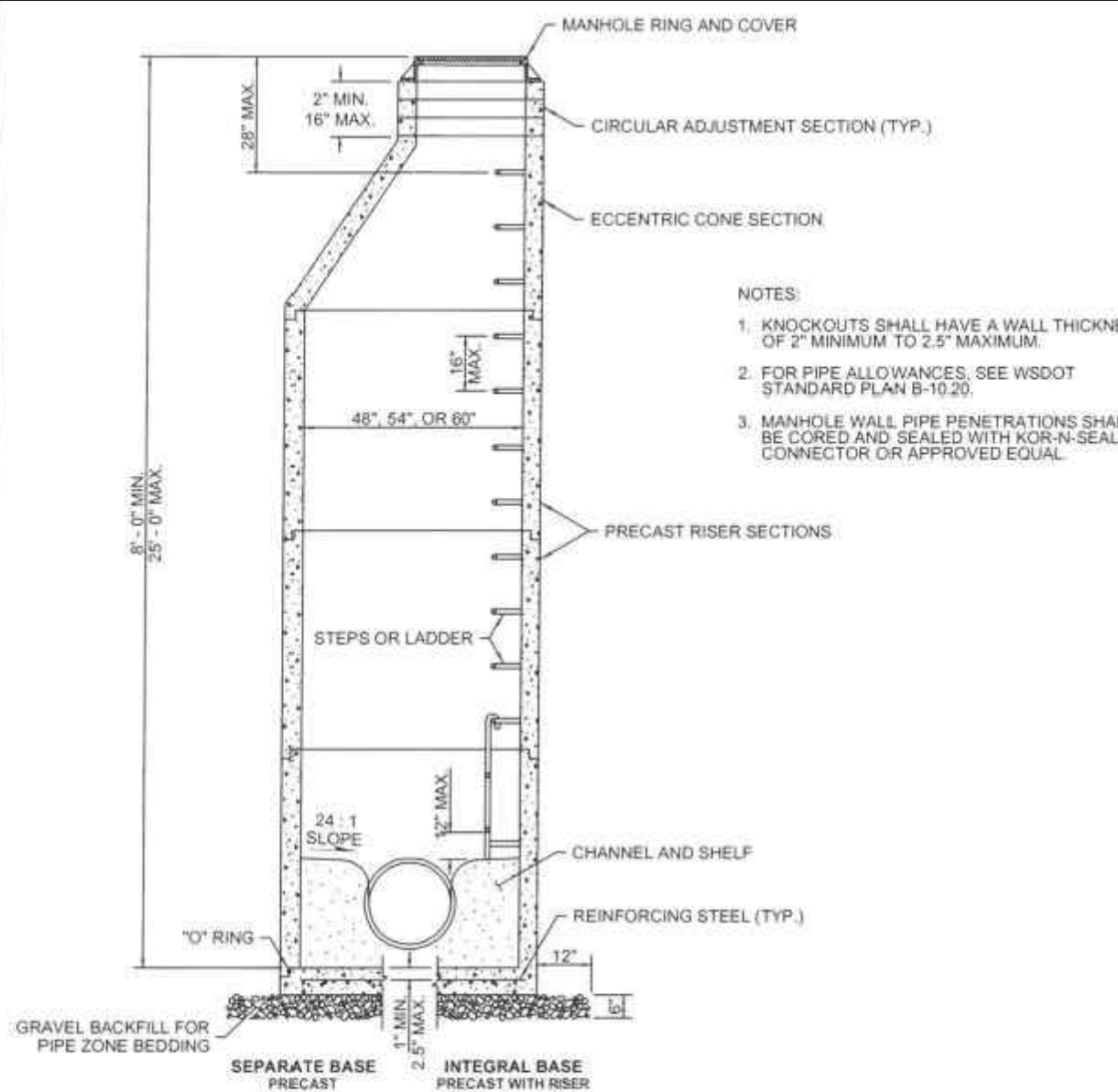
C28

OF

BY 3
CITY OF FERNDALE
PUBLIC WORKS DEPARTMENT

00693.029 07/06/20 KB



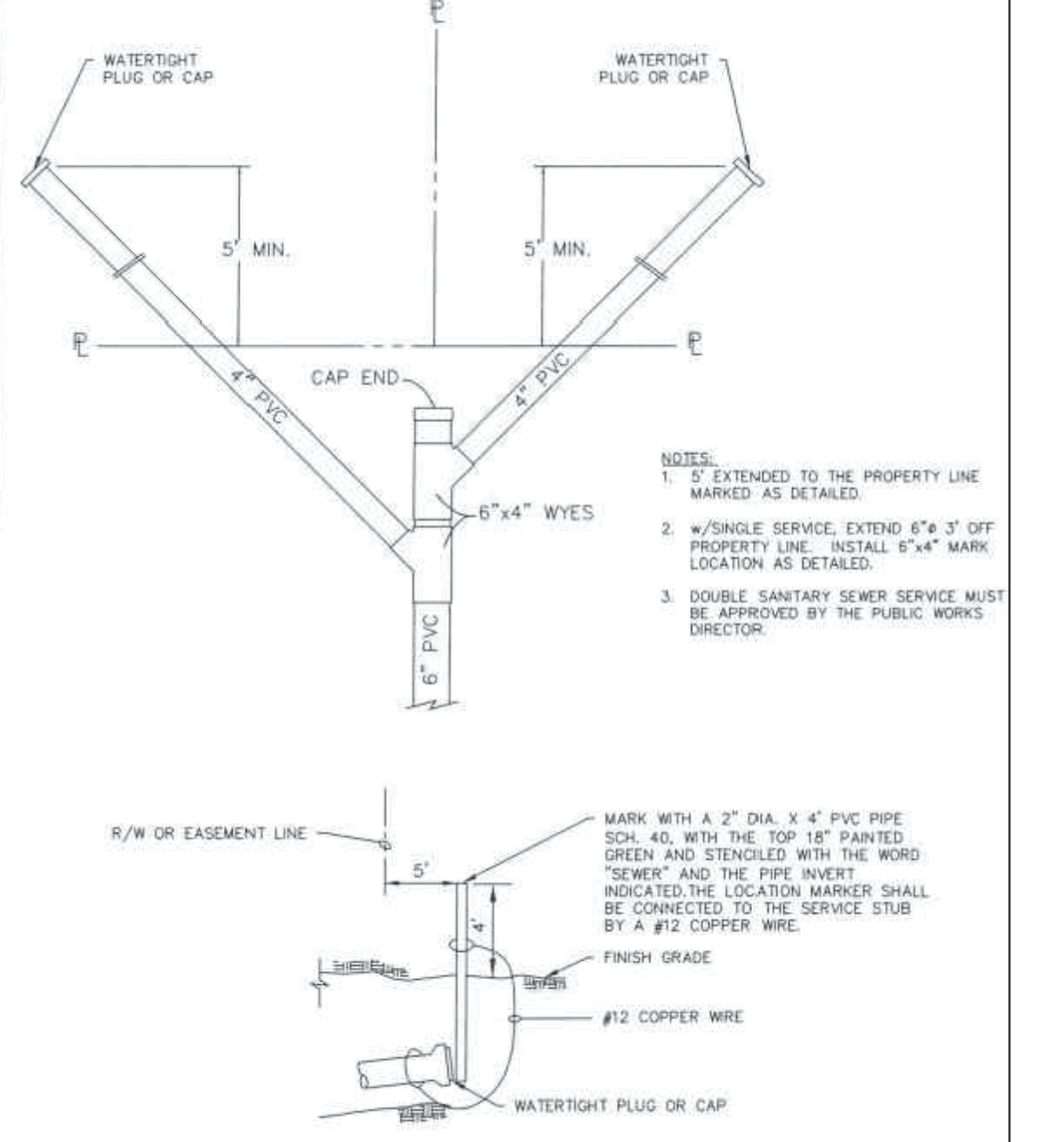


MANHOLE DIMENSION TABLE						BASE REINFORCING STEEL SQ IN/FT EACH DIRECTION	
DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS		INTEGRAL BASE	SEPARATE BASE
48"	4"	6"	36"	8"		0.15	0.23
54"	4.5"	6"	42"	8"		0.19	0.19
60"	5"	8"	48"	8"		0.25	0.25

APPROVED _____
Public Works Director
8/11/17
Date

AUGUST 1, 2017

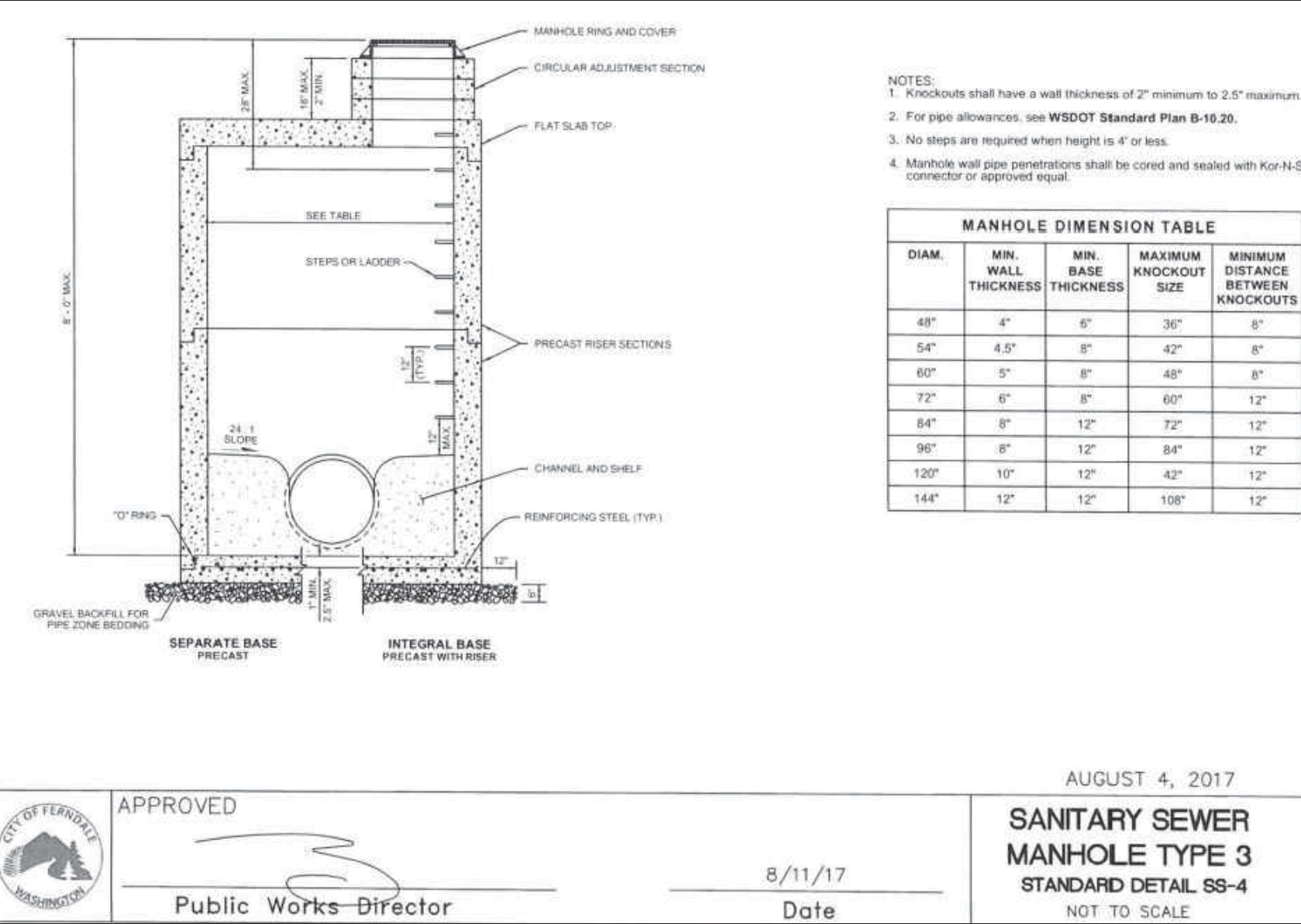
SANITARY SEWER MANHOLE TYPE 1
STANDARD DETAIL SS-3
NOT TO SCALE



APPROVED _____
Public Works Director
8/11/17
Date

NOVEMBER 23, 2016

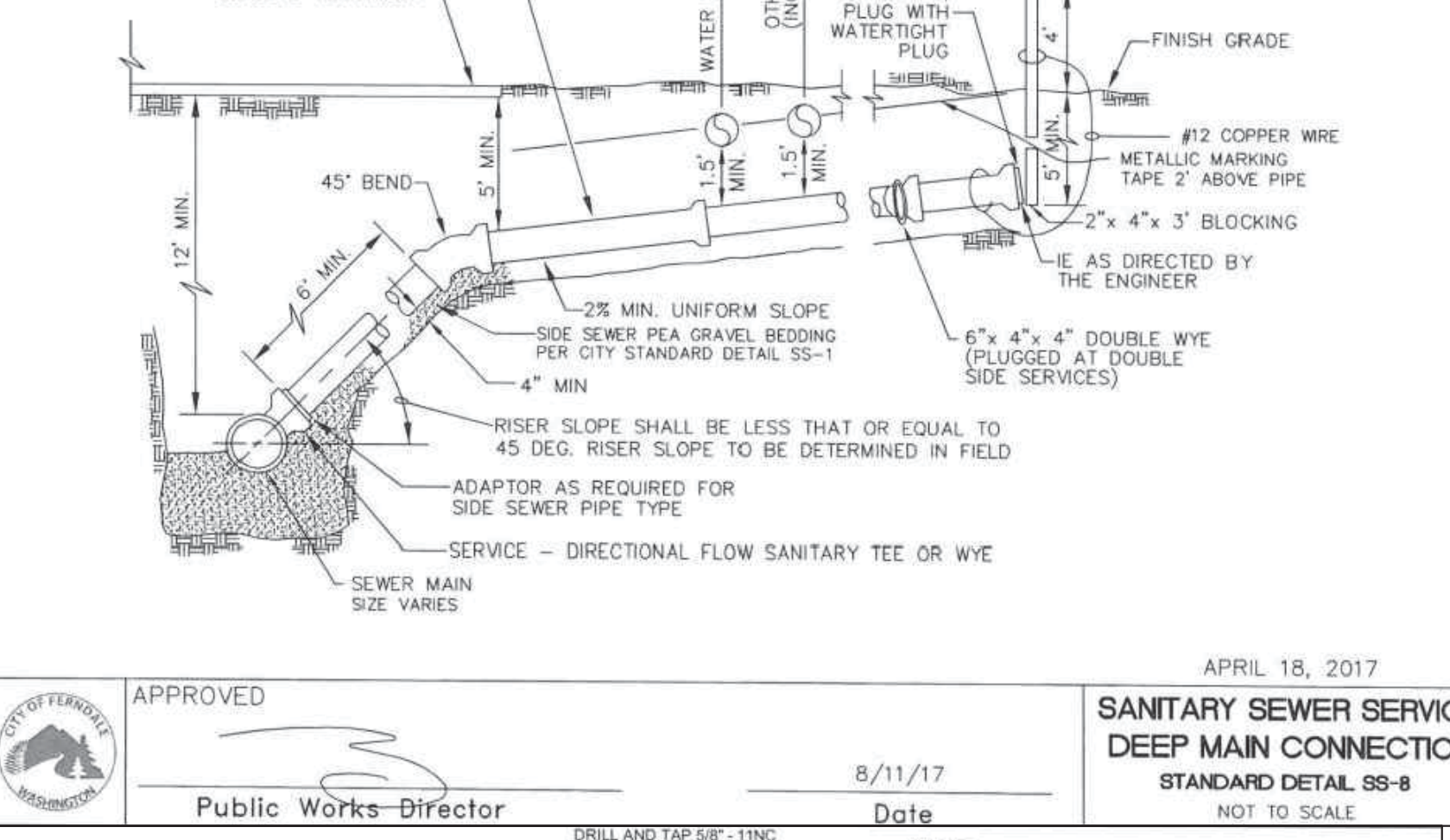
DOUBLE SANITARY SEWER SERVICE
STANDARD DETAIL SS-15
NOT TO SCALE



APPROVED _____
Public Works Director
8/11/17
Date

AUGUST 4, 2017

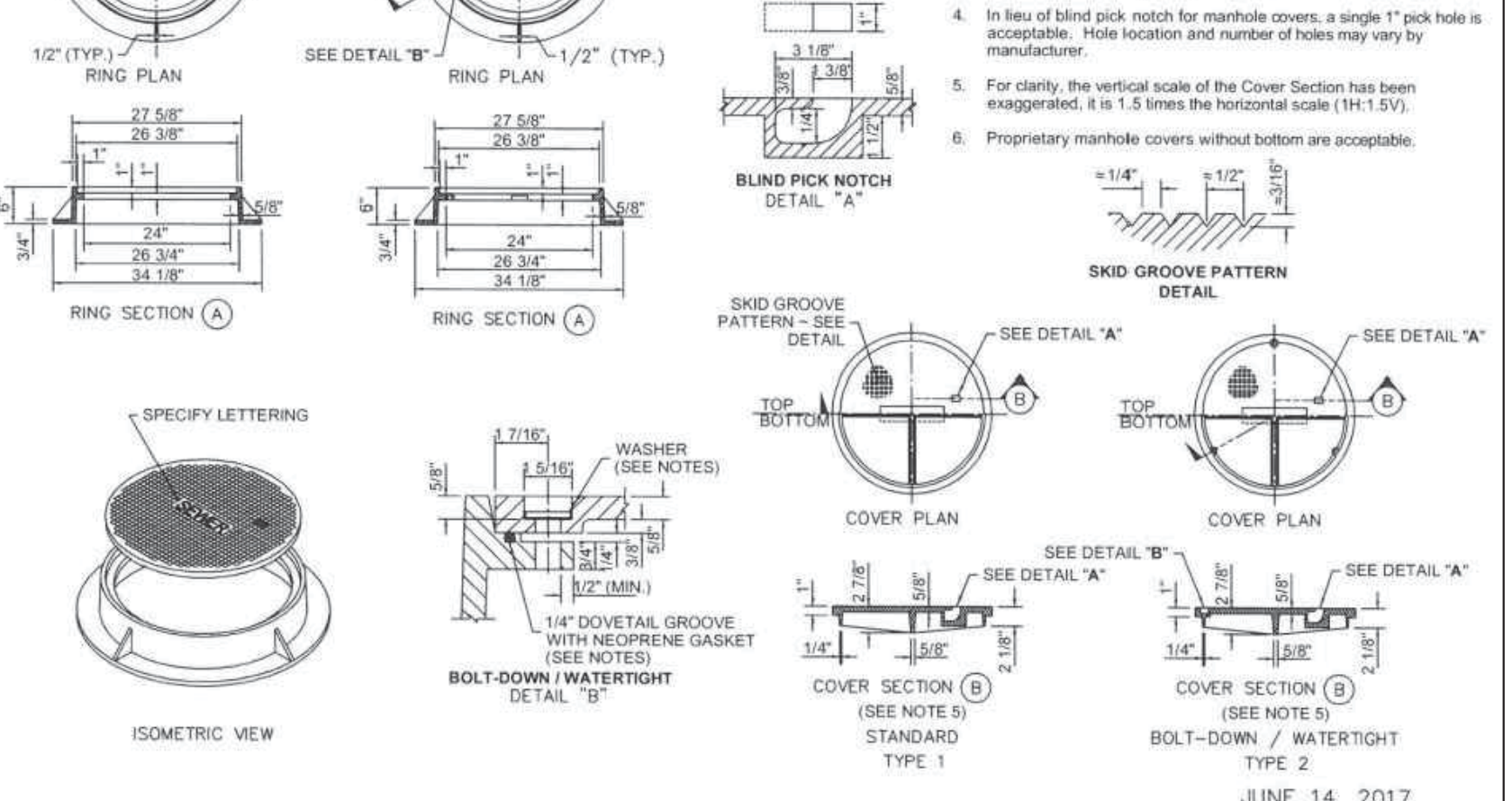
SANITARY SEWER MANHOLE TYPE 3
STANDARD DETAIL SS-4
NOT TO SCALE



APPROVED _____
Public Works Director
8/11/17
Date

APRIL 18, 2017

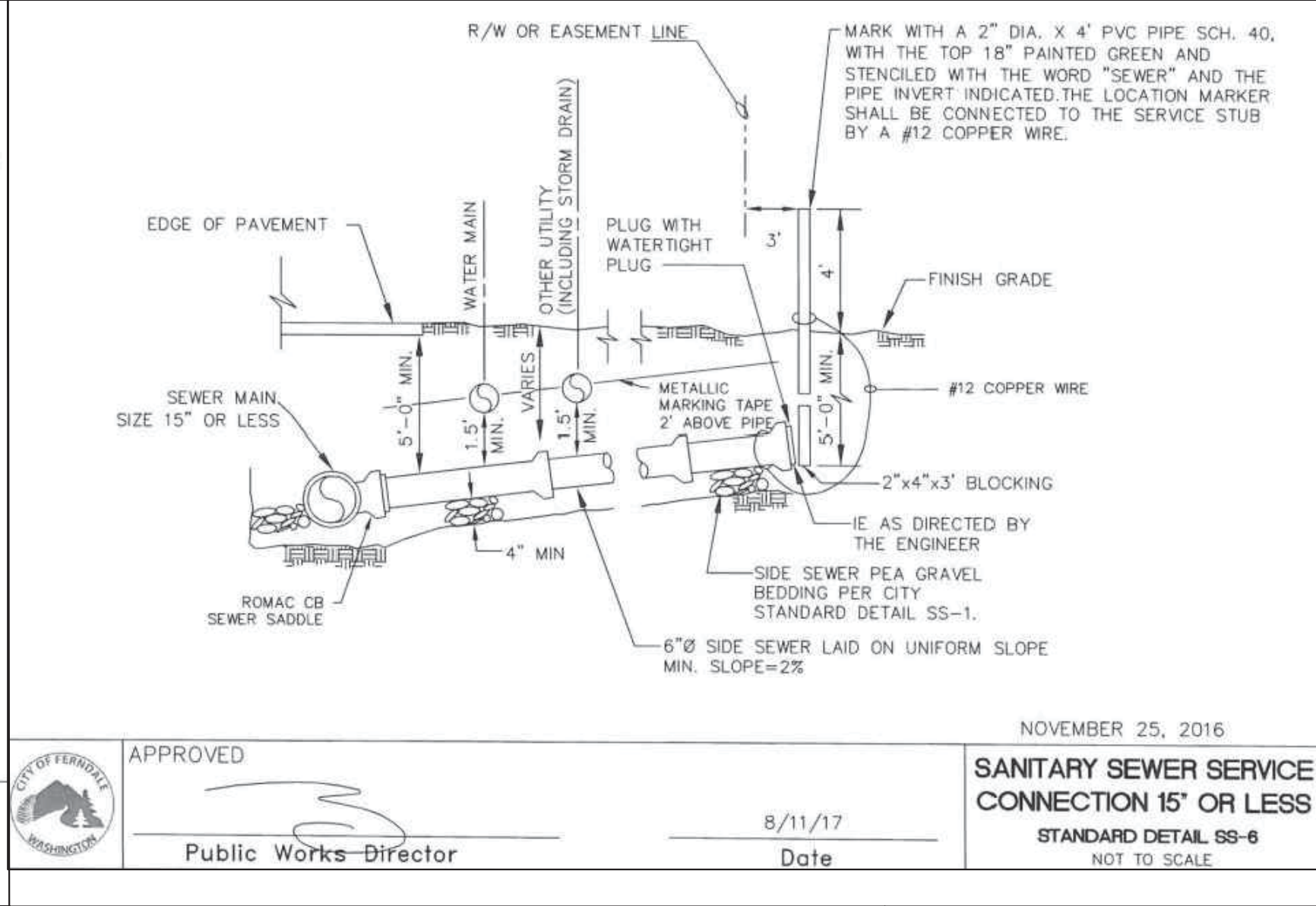
SANITARY SEWER SERVICE DEEP MAIN CONNECTION
STANDARD DETAIL SS-8
NOT TO SCALE



APPROVED _____
Public Works Director
8/11/17
Date

JUNE 14, 2017

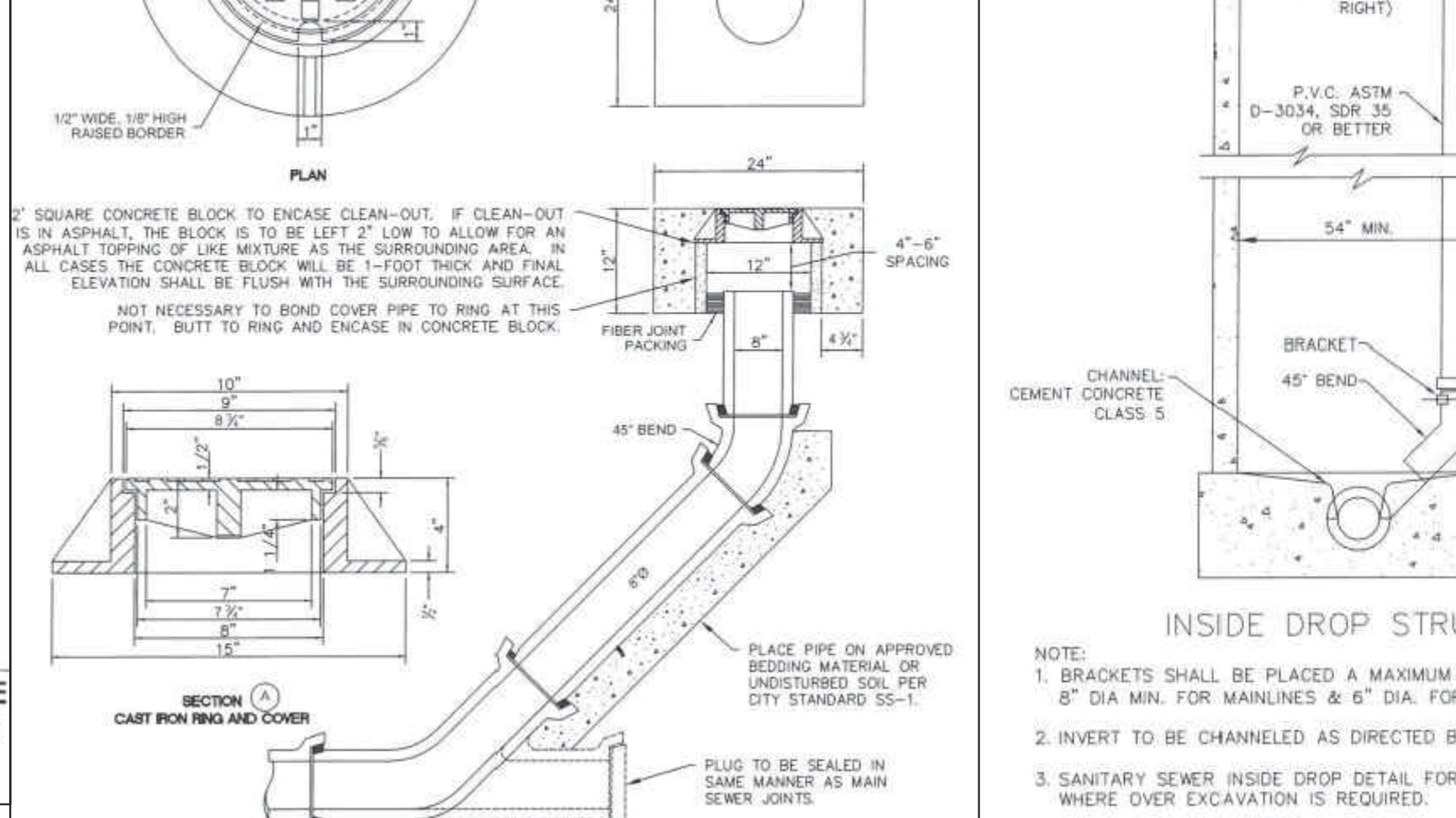
CIRCULAR FRAME AND COVER
STANDARD DETAIL SS-10
NOT TO SCALE



APPROVED _____
Public Works Director
8/11/17
Date

NOVEMBER 25, 2016

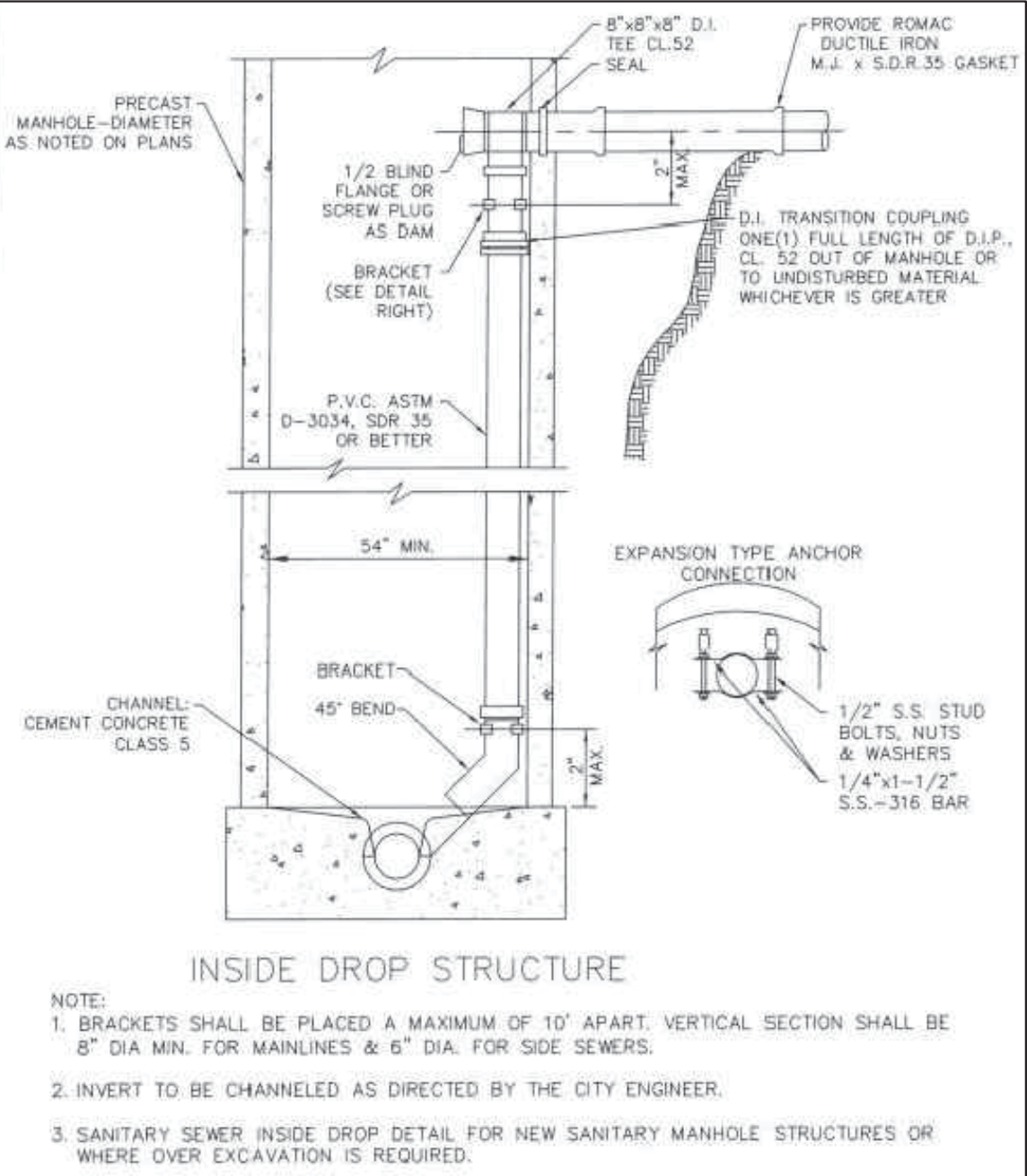
SANITARY SEWER SERVICE CONNECTION 15" OR LESS
STANDARD DETAIL SS-6
NOT TO SCALE



APPROVED _____
Public Works Director
8/11/17
Date

AUGUST 4, 2017

SANITARY SEWER 8" CLEAN OUT
STANDARD DETAIL SS-5
NOT TO SCALE



APPROVED _____
Public Works Director
8/11/17
Date

AUGUST 1, 2017

SANITARY SEWER INSIDE DROP DETAIL
STANDARD DETAIL SS-11
NOT TO SCALE



APPROVED
JUN 17 2020
BY
CITY OF FERDALE
PUBLIC WORKS DEPARTMENT

RECORD DRAWING 06/05/2020

FERDALE, WASHINGTON

MALLOY TERRACE PUD

PHASE 2 CONSTRUCTION

SEWER DETAILS

CASCADE

ENGINEERING GROUP, P.S., INC.

119 Grand Avenue, Suite D
Bellingham, Washington 98225

(360) 306-8161

REVISIONS	DATE

DATE: 06/05/2020

DESIGN: LCP

CHECKED:

SCALE: AS SHOWN

PROJECT NUMBER:

MDGX0001

SHEET NO. C32

OF

