ENGINEERING SUBMITTAL

FOR COWLITZ MEADOWS TOLEDO, WA

PREPARED FOR:

RED ROCK CONSTRUCTION, LLC

PO BOX 1080

TOLEDO, WA 98591

CONTACT: MAX HALBERG

PHONE: (360) 864-8819

EMAIL: MAX@MIDWAYUNDERGROUNDLLC.COM

PREPARED BY:



WINDSOR ENGINEERS

Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Copyright 2022 By Windsor Engineers, LLC All Rights Reserved.

PROJECT NUMBER: 21217



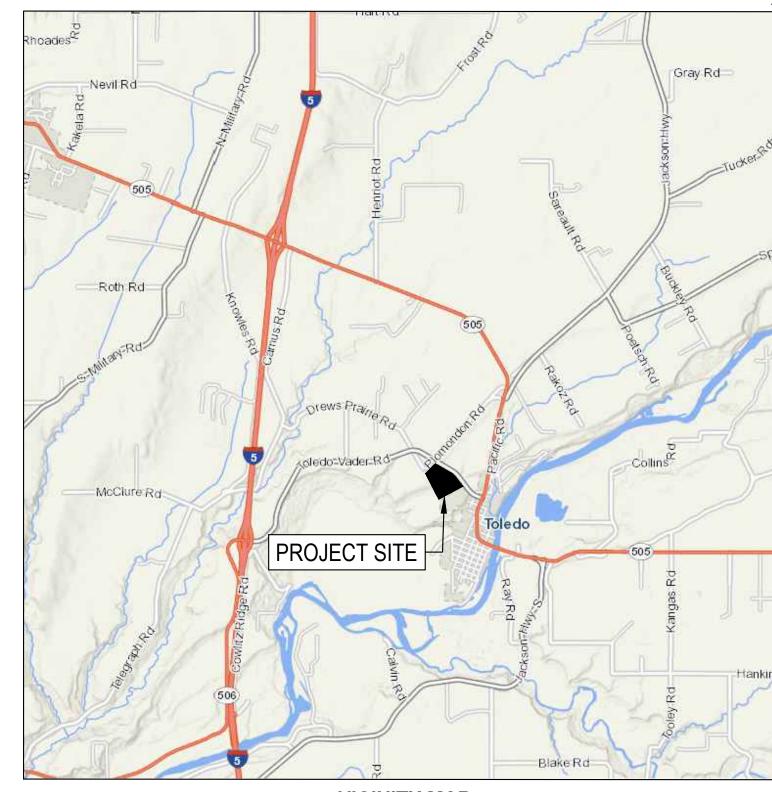
CONTACT: EMILY STEPHENS PHONE: 612-351-2331 EMAIL: ESTEPHENS@WINDSORENGINEERS.COM

SHEET INDEX

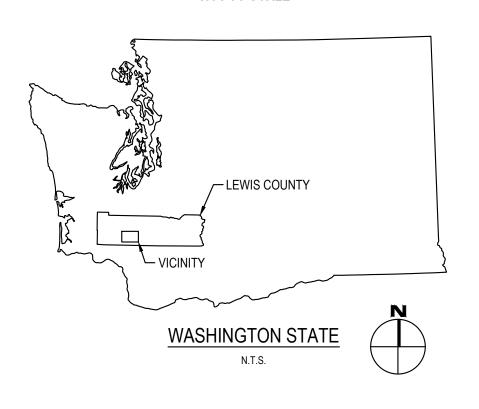
- G001 COVER SHEET
- G002 EXISTING CONDITIONS PLAN
- G003 OVERALL DEVELOPMENT PLAN

- G006 KEY PLAN AND LEGEND
- G007 HORIZONTAL CONTROL PLAN
- C101 PRELIMINARY PLAT
- C102 UTILITY PLAN
- C120 STORMWATER FACILITY PLAN
- C200 A ROAD- STORM PLAN & PROFILE
- C202 B ROAD- STORM PLAN & PROFILE
- C204 C ROAD- STORM PLAN & PROFILE

- C209 E ROAD- STORM PLAN & PROFILE
- C280 SITE DETAILS 1
- C281 SITE DETAILS 2
- C282 SITE DETAILS 3
- C290 ROADWAY DETAILS C291 ROADWAY DETAILS
- C292 ROADWAY DETAILS
- C390 STORM WATER DETAILS
- C391 STORM WATER DETAILS
- C400 A SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C401 A SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C402 B SANITARY SEWER AND WATERMAIN PLAN AND PROFILE C403 B - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C404 C SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C405 C SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C406 D SANITARY SEWER AND WATERMAIN PLAN AND PROFILE C407 D - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C408 E SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C409 E SANITARY SEWER AND WATERMAIN PLAN AND PROFILE
- C490 SANITARY SEWER DETAILS
- C491 SANITARY SEWER DETAILS
- C590 WATER DETAILS
- C591 WATER DETAILS C600 INTERSECTION ROADS A & PLOMONDON
- C601 INTERSECTION ROADS A & B
- C602 INTERSECTION ROADS A & C
- C603 INTERSECTION ROADS A & D
- C700 UTILITY STRUCTURE TABLES AND NOTES



VICINITY MAP NOT TO SCALE

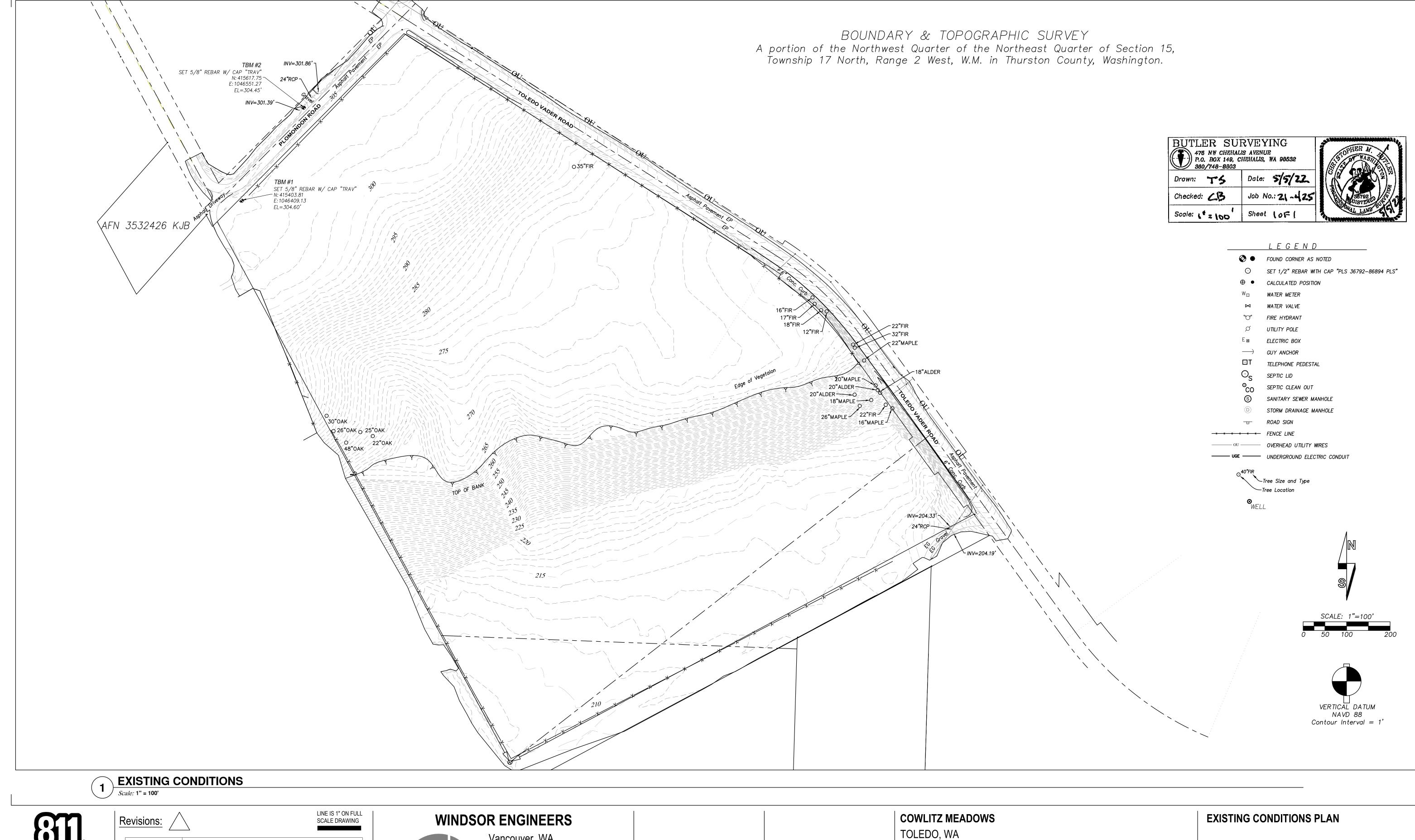


	FIRE - LEWIS COUNTY FIRE & RESCUE					
BY_	DATE					
	WATER - CITY OF TOLEDO					
	WATER - CITT OF TOLEDO					
BY_	DATE					

CITY OF TOLEDO - APPROVAL				
DATE:				
PERMIT NUMBER:				
APPLICATION NUMBER:				
PRINTED NAME:				
SIGNATURE:				

CITY OF TOLED)O
BY PUBLIC WORKS DIRECTOR	DATE
BY	DATE
CITY ENGINEER	<i>5</i> /(12
BY	DATE
COMMUNITY DEVELOPMENT DIRECTOR	
BY	DATE
FIRE MARSHAL	

REVIS	SIONS:



Know what's below.
Call before you dig.

CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.

ENGINEERING SET

Issue Date: 2022-10-x

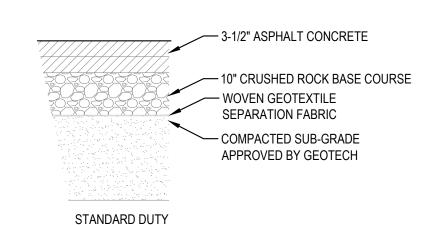
G002

TYPICAL SECTION - COLLECTOR ROAD

WE RECOMMEND AN ASPHALT PAVEMENT THICKNESS OF AT LEAST 3-1/2 INCHES OF ASPHALT CONCRETE (AC) OVER AT LEAST 10 INCHES OF COMPACTED CRUSHED ROCK BASE, PROVIDED THE SUBGRADE IS PREPARED IN ACCORDANCE WITH OUT RECOMMENDATIONS.

THE BASE AGGREGATE SHOULD CONTAIN NO DELETERIOUS MATERIALS. MEET SPECIFICATIONS PROVIDED IN WSDOT SS 9-03.9(3) - CRUSHED SURFACING BASE COURSE, AND HAVE LESS THAN 5 PERCENT (BY DRY WEIGHT) PASSING THE US STANDARD NO. 200 SIEVE. THE IMPORTED GRANULAR MATERIAL SHOULD BE PLACED IN ONE LIFT AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-99. AGGREGATE BASE CONTAMINATED WITH SOIL DURING CONSTRUCTION SHOULD BE REMOVED AND REPLACED

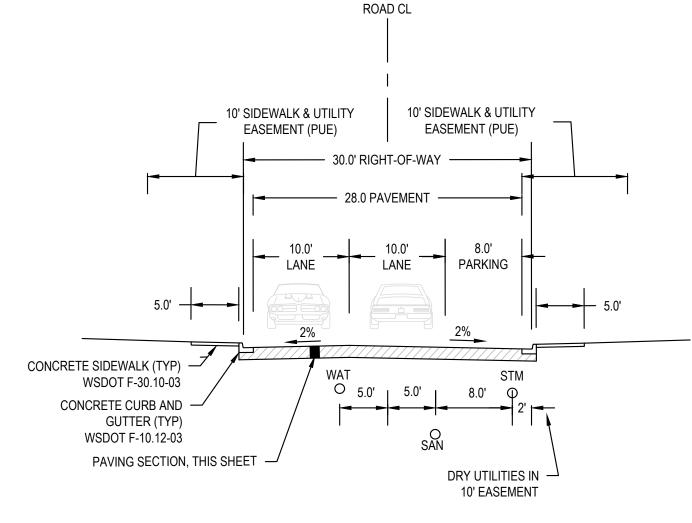
THE AC PAVEMENT SHOULD CONFORM TO SECTION 00744 OF SPECIFICATIONS. WE RECOMMEND HALF INCH DENSE GRADED HOT MIX ASPHALT CONCRETE FOR DESIGN LEVEL 2 USING PERFORMANCE GRADE ASPHALT PG-64-22.



PAVEMENT SECTION

CALL 2 BUSINESS DAYS BEFORE YOU DIG.

CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.



TYPICAL SECTION - LOCAL ACCESS ROAD

length shall be provided with an approved turnaround. Diagrams of approved turnarounds are shown below: (OFC 503.2.5 & D103.1) 20' ---90' DIAMETER ACCEPTABLE ALTERNATIVE TO 90' 45' "Y" ALTERNATIVE CUL-DE-SAC 90' HAMMERHEAD HAMMERHEAD **TURNOUTS:** When a fire apparatus access road exceeds 400 feet in length, turnouts 10 feet wide and 30 feet long shall be provided in addition to the required road width and shall be placed no more than 400 feet apart, unless otherwise approved by the fire code official. These distances may be adjusted based on visibility and sight distances. (OFC 503.2.2)

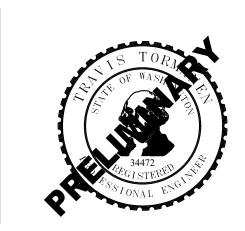
DEAD END ROADS AND TURNAROUNDS: Dead end fire apparatus access roads in excess of 300 feet in

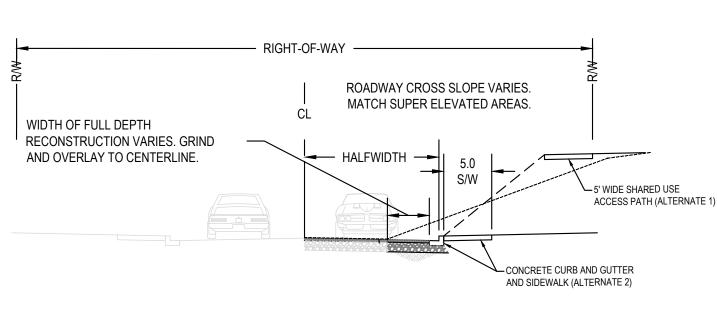
TURNAROUND DETAIL

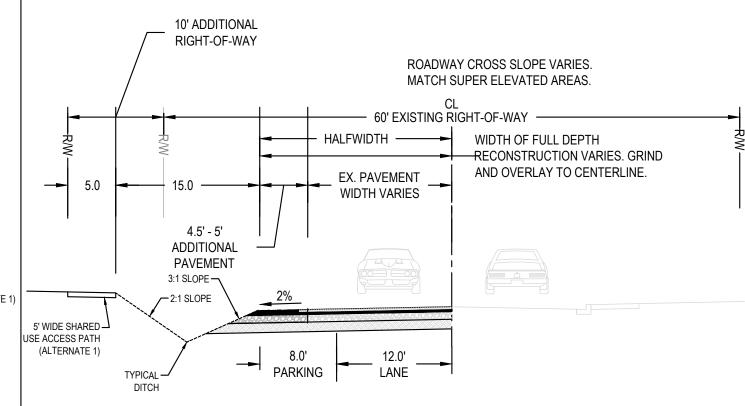
LINE IS 1" ON FULL Revisions: SCALE DRAWING Know what's **below.** Call before you dig.

WINDSOR ENGINEERS

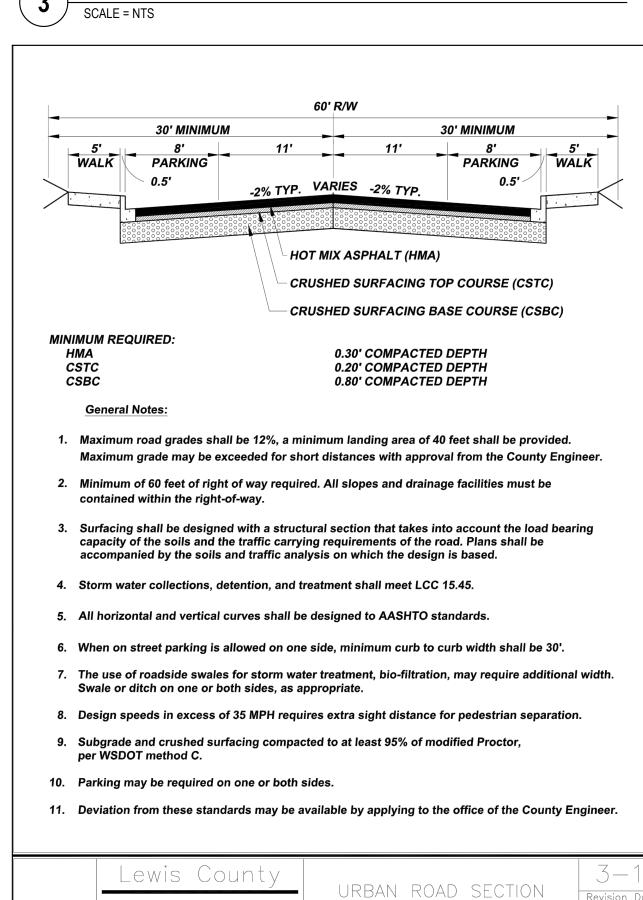




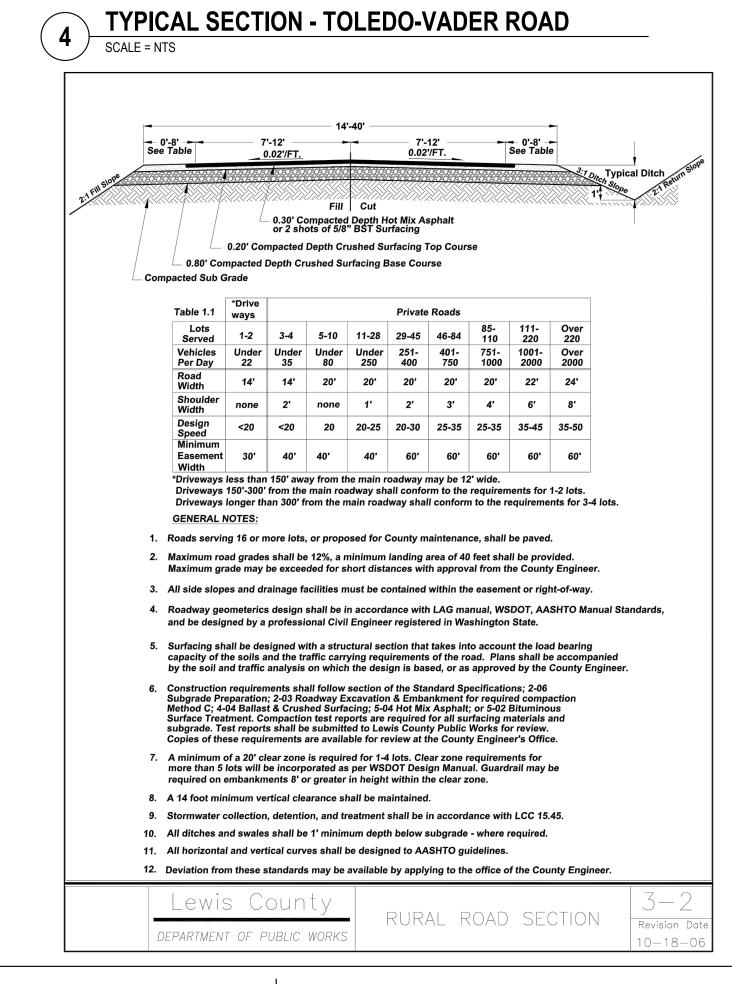




TYPICAL SECTION - PLOMONDON ROAD



DEPARTMENT OF PUBLIC WORKS



COWLITZ MEADOWS

TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x STREET & PAVEMENT TYPICAL SECTIONS

SITE ADDRESS: 0 TOLEDO VADER RD

QUARTER SECTION: NW 1/4, NE 1/4, S07 T11N, R1W,

COUNTY: LEWIS

CRITICAL AREAS

- ON THE SUBJECT PARCEL, THERE ARE NO KNOWN: ON SITE SEPTIC TANKS
- DRAIN FIELDS, EXISTING / PROPOSED WELLS GAS PIPELINES / EASMENTS.
- 2. THE CRITICAL AREAS REPORT PREPARED BY LOOWIT CONSULTING GROUP INDICATES A STEEP SLOPE ZONE AND A CATEGORY III WETLAND.
- 3. A GEOTECHNICAL REPORT PREPARED BY STRATA, INC. PROVIDES RECOMMENDATIONS FOR THIS SITE.

CONTACT INFORMATION

APPLICANT / PROPERTY OWNER RED ROCK CONSTRUCTION (DEVELOPER) CONTACT: MAX HALBERG MAX@MIDWAYUNDERGROUNDLLC.COM

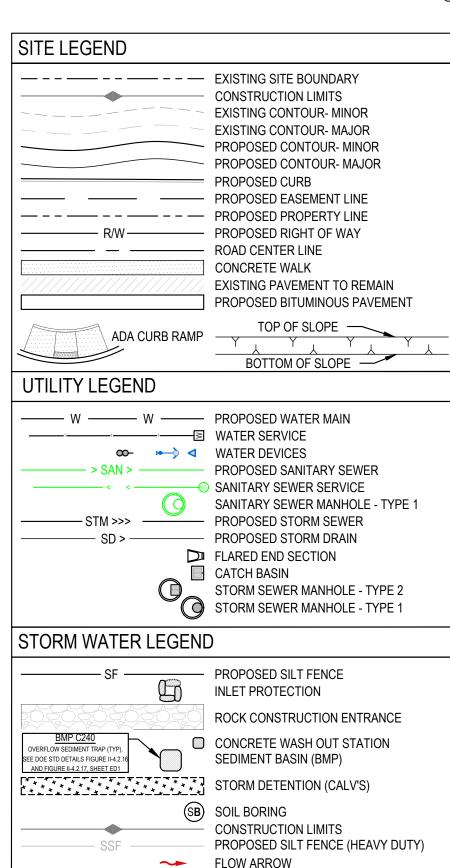
REPRESENTATIVE / CONTACT WINDSOR ENGINEERS, LLC 27300 NE 10TH AVE. RIDGEFIELD, WA 68642 CONTACT: EMILY STEPHENS (612) 351-2331 ESTEPHENS@WINDSORENGINEERS.COM

BUTLER SURVEYING CHEHALIS, WA 98532 CONTACT: CHRIS BUTLER (360) 748-8803 CHRIS@BUTLERSURVEYING.NET

GEOTECHNICAL ENGINEER STRATA DESIGN 1087 LEWIS RIVER ROAD #309 WOODLAND WA 98674 CONTACT: RANDY GOODE (971) 268-6789 RANDALL@STRATA-DESIGN.COM

CRITICAL AREAS / WETLAND LOOWIT CONSULTING GROUP, LLC. CONTACT: TIM HADERLY

THADERLY42@GMAIL.COM



GENERAL PLAN NOTES (PRIVATE)

1. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION. A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 (UTILITY NOTIFICATION CENTER) FOR LOCATION MARK-UP OF EXISTING UTILITIES

2. ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE LATEST STANDARDS AND PRACTICES OF LEWIS COUNTY AND THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" PREPARED BY WSDOT/APWA

3. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.

4. ANY CHANGES TO THE DESIGN AND/OR CONSTRUCTION SHALL BE APPROVED BY THE OWNER OR ENGINEER.

5. APPROVAL OF THESE PLANS DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION NOT SPECIFICALLY SHOWN ON THE PLANS. PLANS FOR STRUCTURES SUCH AS BRIDGES, BUILDINGS, TANKS, VAULTS, ROCKERIES, AND RETAINING WALLS MAY REQUIRE A SEPARATE REVIEW AND APPROVAL BY THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.

6. A COPY OF THESE APPROVED PLANS SHALL BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS AND PERMITS NECESSARY TO PERFORM THE WORK.

8. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

9. PUBLIC AND PRIVATE DRAINAGE WAYS SHALL BE PROTECTED FROM POLLUTION. NO MATERIAL IS TO BE DISCHARGED TO OR DEPOSITED IN STORMWATER SYSTEMS THAT MAY RESULT IN VIOLATION OF STATE OR FEDERAL WATER QUALITY STANDARDS.

10. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL HAVE AN APPROVED PUBLIC RIGHT-OF-WAY WORK PERMIT PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN THE RIGHT-OF- WAY.

11. 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. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES ON THE

12. ANY PUBLIC OR PRIVATE CURB, GUTTER, SIDEWALK, OR ASPHALT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO CITY/COUNTY STANDARDS AND PRACTICES.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WATER, SANITARY SEWER, STORMWATER, POWER, TELEPHONE, CABLE TV, GAS, IRRIGATION, AND STREET LIGHTING. THE CONTRACTOR SHALL NOTIFY RESIDENTS AND BUSINESSES 48 HOURS IN ADVANCE OF ANY WORK AFFECTING ACCESS OR SERVICE AND SHALL MINIMIZE INTERRUPTIONS TO DRIVEWAYS FOR RESIDENTS AND BUSINESSES ADJACENT TO THE

14. ALL LAWN AND VEGETATED AREAS DISTURBED WILL BE RESTORED TO ORIGINAL CONDITION. ANY DISTURBANCE OR DAMAGE TO OTHER PROPERTY ON ADJACENT PARCELS OR IN THE PUBLIC RIGHT OF WAY SHALL ALSO BE REPAIRED OR RESTORED TO ORIGINAL CONDITION.

15. ALL MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR WATER, SANITARY SEWER, AND STORM FACILITIES SHALL CONFORM TO THE CITY OF TOLEDO DESIGN GUIDELINES. CONSTRUCTION SHALL BE AS PER THE MOST CURRENT STANDARD DETAIL CONTAINED THEREIN.

16. THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION OF AND PROVIDE PROTECTION FOR ALL UTILITIES AND STRUCTURES. OVERHEAD UTILITIES ARE NOT SHOWN.

17. EXISTING UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR OR BY THE STANDARD DETAIL CONTAINED THEREIN. UTILITY

18. WHERE THE CONTRACTOR MUST RELOCATE WATER AND GAS UTILITIES, SHUTDOWN SHALL ONLY BE ACCOMPLISHED BY THE CITY OR UTILITY PURVEYOR.

19. ALL OPEN TRENCHES THAT IMPACT PUBLIC ACCESS OR OTHER PROJECT WORK ACCESS OUTSIDE OF THIS PROJECTS SITE, MUST BE STEEL PLATED OR BACKFILLED AND PAVED WITH AT LEAST 2" OF COLD MIX TO ADJACENT EXISTING GRADE AT THE END OF EACH WORKDAY.

20. NOTIFY ADJACENT RESIDENCES AT LEAST ONE DAY PRIOR TO COMMENCING WORK ADJACENT TO THEIR RESIDENCES.

21. SAWCUT ALL PAVEMENT JOIN LINES. WHERE THERE IS A PREVIOUS PAVING EDGE OR CRACK WITHIN 5' OF

22. THE CONTRACTOR SHALL COMPLY WITH WASHINGTON REQUIREMENTS FOR TRENCH SAFETY.

THE SAWCUT EDGE, REMOVE THE PAVEMENT TO THE PREVIOUS PAVING EDGE.

23. THE CONTRACTOR SHALL REPLACE ALL SURVEY MONUMENTS THAT ARE DESTROYED BY THE CONSTRUCTION.

24. ALL WATER PIPING SHALL BE CONSTRUCTED WITH 3' MINIMUM COVER, 1' VERTICAL SEPARATION BETWEEN UTILITIES, AND A MINIMUM OF 10' HORIZONTAL SEPARATION AND 18" ABOVE SEWER LINES, UNLESS OTHERWISE NOTED.

25. THE CONTRACTOR SHALL RESTORE PAVEMENT AND LANDSCAPING DISTURBED BY THE CONSTRUCTION TO THE PREVIOUSLY UNDISTURBED CONDITION.

26. CONTRACTOR TO DISPOSE OF TREES, SHRUBS, SOD AND OTHER DEBRIS IN A PROPER MANNER OF THE CONTRACTOR'S CHOOSING.

GENERAL CIVIL NOTES

TOPOGRAPHIC SURVEY BY BUTLER SURVEYING

HORIZONTAL DATUM: WASHINGTON STATE PLANE SOUTH ZONE **ELEVATION DATUM:NAVD 88**

ON-SITE STORM SEWER IMPROVEMENTS SHALL CONFORM TO THE LATEST VERSION OF THE UPC, AND CONFORM TO WSDOT SPECIFICATIONS WHERE NOTED.

SURFACES) BETWEEN STORM DRAIN PIPES AND OTHER UTILITY PIPES AND CONDUITS. FOR CROSSINGS OF SANITARY SEWER LINES, THE WASHINGTON DEPARTMENT OF ECOLOGY CRITERIA APPLY.

ALL CATCH BASINS SHALL BE LABELED WITH "NO DUMPING*PROTECT WATER*ONLY RAIN IN DRAIN" MEDALLIONS. MEDALLIONS SHALL BE AFFIXED TO DRY SURFACE WITH HIGH QUALITY POLYURETHANE SEALANT AND RIVETS.

ADS, PRODUCT NAME N12, OR APPROVED EQUAL. ALL STORM SEWER FITTINGS AND PIPE JOINTS SHALL BE GASKETED.

2' SUMP INCLUDED ON ALL CATCH BASIN MANHOLES. 1.5' MIN SUMP INCLUDED ON CATCH BASINS.

PERFORATED PIPE SHALL BE ADS SINGLE WALL PERFORATED PIPE WITH SOCK OR EQUAL.

ALL STORM SEWER PIPE SHALL HAVE A MINIMUM 12" DIAMETER WITHIN ROADWAY

ALL ON-SITE STORMWATER FACILITIES SHALL BE PRIVATELY MAINTAINED BY THE CURRENT OR FUTURE PROPERTY OWNER(S).

ALL VAULT, UTILITY BOX, INLET, MANHOLE AND CLEANOUT RIMS SHALL BE ADJUSTED TO FINISH GRADE UNLESS OTHERWISE NOTED.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND MAINTAIN ANY STORM SYSTEM PIPING TO PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

ON-SITE (PRIVATE) SANITARY SEWER IMPROVEMENTS SHALL CONFORM TO THE LATEST VERSION OF THE IBC. THE UPC. AND WSDOT SPECIFICATIONS WHERE NOTED AND THE CITY OF TOLEDO GENERAL REQUIREMENTS.

SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) AND CONFORM TO ASTM D3034, SDR35.

CONTRACTOR SHALL COORDINATE ALL BUILDING SANITARY CONNECTIONS WITH PLUMBING PLAN PRIOR TO CONSTRUCTION.

CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND INSPECTIONS.

ALL WATERMAIN INSTALLATION, DISINFECTION AND TESTING SHALL COMPLY WITH WSDOT STANDARD SPECIFICATIONS. UPC, AND CITY OF TOLEDO WATER DESIGN AND CONSTRUCTION STANDARDS.

FIRE SPRINKLER:

UNDERGROUND FIRE SPRINKLER SUPPLY MAINS SHALL BE INSTALLED ONLY BY CONTRACTORS IN COMPLIANCE WITH WAC 212-80

IF ANY CULTURAL RESOURCES AND/OR HUMAN REMAINS ARE DISCOVERED IN THE COURSE OF UNDERTAKING THE DEVELOPMENT ACTIVITY, THE DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION IN OLYMPIA AND COWLITZ COUNTY SHALL BE NOTIFIED. FAILURE TO COMPLY WITH THESE STATE REQUIREMENTS MAY CONSTITUTE A CLASS C FELONY, SUBJECT TO IMPRISONMENT AND/OR FINES.

STANDARD DETAIL STATEMENT

ALL MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR WATER, SEWER, STORM WATER FACILITIES, AND EROSION CONTROL MEASURES, SHALL CONFORM TO CITY OF TOLEDO ENGINEERING SERVICES "TOLEDO DEVELOPMENT GUIDELINES." CONSTRUCTION SHALL BE AS PER THE MOST CURRENT

GRADING & EROSION CONTROL NOTES

NO GRADING WITHIN 2' OF ADJACENT PARCELS PER IBC.

STRIP ORGANICS PER GEOTECH REPORT. REDEPOSIT ABOVE COMPACTED FILL TO A MAX DEPTH OF 6" (12" IN LANDSCAPE AREAS).

FINISH GRADE CONTOURS ARE TO TOP OF FINISHED SURFACE IN IMPERVIOUS AREAS AND TOP OF REPLACED STRIPPINGS IN PERVIOUS AREAS.

STRIPPINGS TO REMAIN ON SITE AND BE REDISTRIBUTED OVER LANDSCAPE AREAS AFTER ALL GRADING ACTIVITIES ARE COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE FOR HAUL-OFF EXCESS MATERIAL.

CUT AND FILL QUANTITIES ARE BASED ON GENERAL SITE GRADING ESTABLISHED FROM THE STRIPPED GRADE MANAGEMENT PRACTICES REMOVED IF APPROPRIATE TO THE FINISHED PROPOSED SUBGRADE AND TRENCH SPOILS. THESE VOLUMES DO NOT TAKE INTO ACCOUNT ANY UNKNOWN SOIL DEPOSITS OR OVER-EXCAVATION OF NON-ORGANIC MATERIALS THAT ARE DISCOVERED ON SITE, NOR WET WEATHER CONDITIONS, CONTRACTOR SHALL BE RESPONSIBLE TO PRODUCE INDEPENDENT GRADING VOLUMES AS WELL AS ACCOUNT FOR OBSERVATION OF MEASURES DIRECTED WITHIN THE GEOTECHNICAL REPORT OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER DURING THE COURSE OF CONSTRUCTION.

PRIOR TO ACCEPTANCE OF THE COMPACTED SUB-GRADE, THE CONTRACTOR SHALL PROVIDE A TEST ROLL IN THE PRESENCE OF OWNER / CITY REPRESENTATIVE UNLESS OTHERWISE APPROVED BY THE GEOTECHNICAL ENGINEER.

GENERAL UTILITY SHEET NOTES:

- THE SANITARY SEWER AND WATER MAIN AS INDICATED ON THIS SHEET ALONG ROAD A, ROAD B, ROAD C, ROAD D AND ROAD E ARE TO BE CONSTRUCTED TO CONNECT TO TOLEDO VADER ROAD INFRASTRUCTURE
- 2. MARK CURB AND GUTTER WITH A "W" OR "S" TO SHOW LOCATION OF UTILITY SERVICE LINE CROSSINGS.
- 3. SEE DETAIL SHEETS FOR CONSTRUCTION DETAILS SANITARY SEWER DETAILS - SHEETS C490 AND C491. WATER DETAILS - SHEET C590 AND C591.

DOE STANDARD NOTES FOR EROSION CONTROL PLAN

1. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL 1. CONTRACTORS SHALL EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ADA OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTIONS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.)

2. THE IMPLEMENTATIONS OF THESE ESC PLANS AND THE CONSTRUCTIONS, MAINTENANCE, REPLACEMENT. AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR. UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE THE CONTRACTOR SHALL MAINTAIN 6" MINIMUM VERTICAL AND 3' MINIMUM HORIZONTAL CLEARANCE (OUTSIDE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

> 4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEMS, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.

STORM DRAIN PIPE, BENDS, AND FITTINGS SHALL BE PVC, ASTM D 3034, SDR 35, OR SMOOTH INTERIOR, HIGH 5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE DENSITY POLYETHYLENE CORRUGATED PIPE AASHTO M252 OR M294, TYPE S AS PRODUCED AND SPECIFIED BY CONDITIONS, DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.

> 6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.

7. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT.

8. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.

9. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE ALL

10. THE PROPOSED STORMWATER FACILITY MUST REMAIN OFFLINE UNTIL THE PROJECT IS COMPLETE AND VEGETATION THROUGHOUT THE SITE HAS BEEN ESTABLISHED. IF AT ANY TIME THE FACILITY BECOMES INUNDATED WITH SEDIMENT FILLED RUNOFF, THE TOP 2" OF MATERIAL MUST BE REMOVED AND REPLACED

RECOMMENDED CONSTRUCTION SEQUENCE FOR EROSION CONTROL

1. PRE-CONSTRUCTION MEETING.

2. FLAG OR FENCE CLEARING LIMITS

3. POST NOTICE OF CONSTRUCTION ACTIVITY SIGN WITH THE NAME AND PHONE NUMBER OF EROSION SEDIMENT CONTROL SUPERVISOR.

4. INSTALL CATCH BASIN PROTECTION, IF REQUIRED.

5. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).

INSTALL TREE PROTECTION FENCING.7. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).

CONSTRUCT SEDIMENT POND(S) AND TRAP(S).

9. GRADE AND STABILIZE CONSTRUCTION ROADS.

 CONSTRUCT SURFACE WATER CONTROLS (INTERCEPT DIKES, PIPE SLOPE DRAINS, ETC) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.

11. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON AND MANUFACTURER'S RECOMMENDATIONS

12. RELOCATE SURFACE WATER CONTROLS AND EROSION CONTROL MEASURE OR INSTALL NEW MEASURES

SO THAT AS SITE CONDITIONS CHANGE THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CLARK COUNTY EROSION AND SEDIMENT CONTROL STANDARDS.

13. COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING OR

14. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS.

15. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.

16. ALL DISTURBED PERVIOUS AREAS MUST MEET BMP T5.13 IN THE 2019 MANUAL. EXISTING TOPSOIL MAY NEED TO BE AMENDED TO REACH APPROVED RATES, OR IMPORT TOPSOIL WITH SUFFICIENT ORGANIC CONTENT AND WIDTH.

17. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BEST

AMERICANS WITH DISABILITIES ACT (ADA) NOTES

ACCESSIBLE COMPONENTS ON THE PROJECT, THE ADA COMPONENTS MUST COMPLY WITH ALL LOCAL, STATE, AND FEDERAL ACCESSIBILITY RULES, CODES, AND REGULATIONS.

2. FINISHED SURFACES ALONG THE ACCESSIBLE PATH OF TRAVEL FROM PARKING STALLS, PUBLIC TRANSPORTATION, AND PEDESTRIAN ACCESS WAYS TO THE POINT(S) OF ACCESSIBLE BUILDING INGRESS AND EGRESS SHALL COMPLY WITH ADA CODE REQUIREMENTS.

3. PARKING SPACE AND AISLE SLOPE SHALL NOT EXCEED 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY

4. CURB RAMP SLOPE SHALL NOT EXCEED 1:12 (8.3%) AND RAMP LENGTH IS LIMITED TO 15 FEET.

5. LANDINGS SHALL BE PROVIDED AT EACH END OF RAMPS, SHALL HAVE POSITIVE DRAINAGE, AND SHALL NOT EXCEED 1:48 (1/4"PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.

6. PATH OF TRAVEL ALONG ACCESSIBLE ROUTE SHALL PROVIDE A MINIMUM OF 36 INCH UNOBSTRUCTED WIDTH OF TRAVEL. SLOPE SHALL BE NO GREATER THAN 1:20 (5.0% OR 5/8" PER FOOT) IN THE DIRECTION OF TRAVEL, AND SHALL NOT EXCEED 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL BE GREATER THAN 1:20 (5.0%), AN ACCESSIBLE RAMP WITH A MAXIMUM SLOPE OF 1:12 (8.3%) FOR A MAXIMUM DISTANCE OF 30 FEET SHALL BE PROVIDED INCLUDING HANDRAILS. THE RAMP SHALL HAVE ACCESSIBLE HAND RAILS AND LANDINGS ON EACH END WITH A SLOPE IN ANY DIRECTION NOT EXCEEDING 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%).

7. DOORWAYS SHALL HAVE A LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED NO MORE THAN 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA SHALL BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT HERE OTHERWSE PERMITTED BY ACCESSIBILITY STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS AND APPROVED BY THE OWNER'S REPRESENTATIVE.

8. WHERE PEDESTRIAN ACCESS ROUTES ARE CONTAINED WITHIN A STREET OR HIGHWAY RIGHT-OF-WAY, THE GRADE OF THE PEDESTRIAN ACCESS ROUTE IS PERMITTED TO EQUAL THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET OR HIGHWAY, EXCEPT THAT WHERE PEDESTRIAN ACCESS ROUTES ARE CONTAINED WITHIN PEDESTRIAN STREET CROSSINGS A MAXIMUM GRADE OF 5 PERCENT IS REQUIRED. (EXCERPT FROM PROWAG)

GENERAL FIRE NOTES

1. GENERAL FIRE SAFETY PRECAUTIONS SHALL BE MAINTAINED, IN ACCORDANCE WITH CHAPTER 33 OF THE INTERNATIONAL FIRE CODE; FIRE SAFETY DURING CONSTRUCTION

2. ALL WORK SUBJECT TO FIELD INSPECTION AND CORRECTION(S) AS IDENTIFIED AT THE TIME OF THE ON-SITE INSPECTION; ALL WORK SHALL BE COMPLIANT WITH THE APPLICABLE STANDARDS AND CODES; TO INCLUDE THE ADOPTED EDITION OF THE INTERNATIONAL FIRE CODE AND THE CITY'S MUNICIPAL CODE.

3. ALL FIRE ALARM AND FIRE SPRINKLERS SHALL BE SUBMITTED SEPARATELY AND DIRECTLY TO THE FIRE

4. MODIFICATIONS FOR FUTURE TENANT IMPROVEMENT(S) MAY REQUIRE AN ALTERNATE PLANS

5. APPENDIX D FOR FIRE APPARATUS ACCESS ROADSALL ON-SITE PRIVATE UNDERGROUND FIRE SUPPRESSION WATER SUPPLY SHALL BE SUBMITTED TO THE FIRE MARSHAL (THIS INLCUDES PRIVATE HYDRANTS, UNDERGROUND FOR FDC'S AND FIRE SPRINKLER UNDERGROUND CONNECTIONS).

6. IFC APPENDIX D FIRE APPARATUS ACCESS ROADS. WHERE HYDRANTS ARE ON A FIRE APPARATUS ACCESS ROAD, THE MINIMUM WITH OF THE ROAD SHALL BE 26 FEET FOR A DISTANCE OF 20 FEET; 10 FEET IN EITHER

7. IFC 503.3 MARKING WHERE REQUIRED BY THE FIRE CODE OFFICIAL, APPROVED SIGNS OR OTHER APPROVED

NOTICES OR MARKINGS THAT INCLUDE THE WORDS NO PARKING FIRE LANE SHALL BE PROVIDED FOR FIRE

APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS OR PROHIBIT THE OBSTRUCTION THEREOF. THE MEANS BY WHICH FIRE LANES ARE DESIGNATED SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION AT ALL TIMES AND BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY. 8. IFC D103.6 FIRE APPARATUS ACCESS PARKING RESTRICTIONS--SIGNS: REQUIRED ROADWAYS MUST HAVE

SIGNAGE FOR PARKING RESTRICTIONS AS FOLLOWS: SIGNS FOR NO-PARKING--FIRE LANE SHALL COMPLY WITH A MINIMUM DIMENSION OF 12 INCHES WIDE BY 18 INCHES HIGH AND HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND. SIGN'S SHALL BE PROVIDED ON BOTH SIDES OF ALL STREETS THAT ARE LESS THAN 26 IN WIDTH IN ACCORDANCE WITH LOCAL STANDARDS FOR ACCESS AND FUTURE ENFORCEMENT SIGNS FOR NO-PARKING MUST BE PROVIDED ON ONE SIDE OF ALL STREETS THAT ARE BETWEEN 26 AND 32 IN WIDTH ACCORDANCE WITH LOCAL STANDARDS FOR ACCESS AND FUTURE ENFORCEMENT.

9. IFC 506 WHERE REQUIRED ACCESS IS RESTRICTED WITH A GATE, AN APPROVED PADLOCK OR KEY SWITCH (FOR ELECTRONIC/AUTOMATED GATES) SHALL BE PROVIDED TO ALLOW FIRE DEPARTMENT ACCESS.

10. IFC 503.1.1 / D102 / D103 ROADWAYS TO ACCESS STRUCTURES: THE PERIMETER OF ALL STRUCTURES MUST BE WITHIN 150 FEET OF AN APPROVED ACCESS ROAD WITH A MINIMUM CLEAR WIDTH OF 20 FEET (26 FEET WHERE A HYDRANT IS LOCATED). BUILDING SHALL BE INSTALLED WITH AUTOMATIC FIRE SPRINKLERS AS AN ALTERNATIVE TO DISTANCE FROM A FIRE ACCESS ROAD.

11. IFC 507.5.4 FIRE PROTECTION WATER SUPPLY: UNOBSTRUCTED ACCESS TO FIRE HYDRANTS SHALL BE MAINTAINED AT ALL TIMES. THE FIRE DEPARTMENT SHALL NOT BE DETERRED OR HINDERED FROM GAINING IMMEDIATE ACCESS TO FIRE PROTECTION EQUIPMENT OR FIRE HYDRANTS REQUIRED ACCESS ROADWAYS AND HYDRANTS SHALL BE SERVICEABLE AND UNOBSTRUCTED PRIOR TO COMBUSTIBLE CONSTRUCTION.

CIVIL NOTES AND ABBREVIATIONS

GENERAL ABBREVIATIONS

	(E)	EXISTING	G	NATURAL GAS (LOW PRESSURE)	POC	POINT OF CONNECTION
	С	CONCRETE	GB	GRADE BREAK	POS	POINT OF SERVICE
	СВ	CATCH BASIN	HP	HIGH POINT	PP	POWER POLE
	CL	CENTERLINE	IBC	INTERNATIONAL BUILDING CODE	PT	POINT OF TANGENCY
	CNS	COMPACTED NATIVE SOIL	LF	LINEAR FOOT	R	RADIUS
	CO	CLEAN OUT	LP	LOW POINT	ROW	RIGHT OF WAY
	CR	CURB RETURN	MG	NATURAL GAS (MEDIUM PRESSURE)	S	SLOPE / SANITARY
	D	DIRT / DRAINAGE	MG	MATCH EXISTING GRADE	SAN	SEWER SEWER
	DCDA	DOUBLE CHECK DETECTOR ASSEMBLY	MH	MANHOLE	SSMH	SANITARY MANHOLE
	FG	FINISHED GRADE	NS	NATIVE SOIL	STA	STATION
	FH	FIRE HYDRANT	NTS	NOT TO SCALE	STM	STORM DRAIN
	FL	FLOW LINE	Р	PAVEMENT	STMH	STORM MANHOLE
	FM	FORCE MAIN	PC	POINT OF CURVATURE	TBD	TO BE DETERMINED
-						

UTILITY TBR TO BE REMOVED BY CONTRACTOR TC TOP OF CURB

TBL TO BE RELOCATED BY RESPECTIVE

TOE TOE OF BANK TOP TOP OF BANK

TP TELEPHONE POLE UPC UNIFORM PLUMBING CODE

U UNDERGROUND VIP VERIFY IN FIELD PRIOR TO CONSTRUCTION

W WATER MAIN

XFMR TRANSFORMER





WINDSOR ENGINEERS



Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC



COWLITZ MEADOWS

ENGINEERING SET

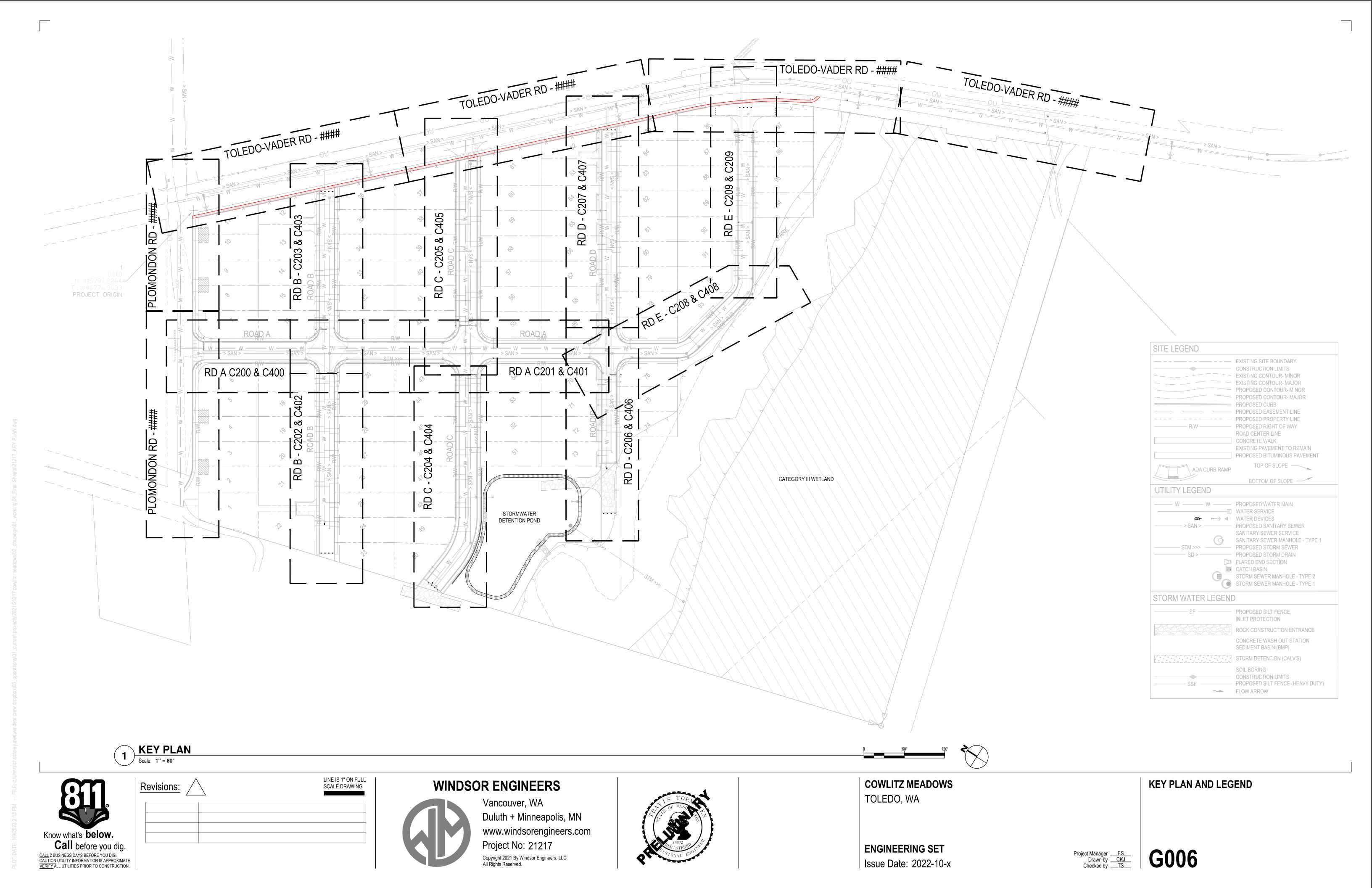
Issue Date: 2022-10-x

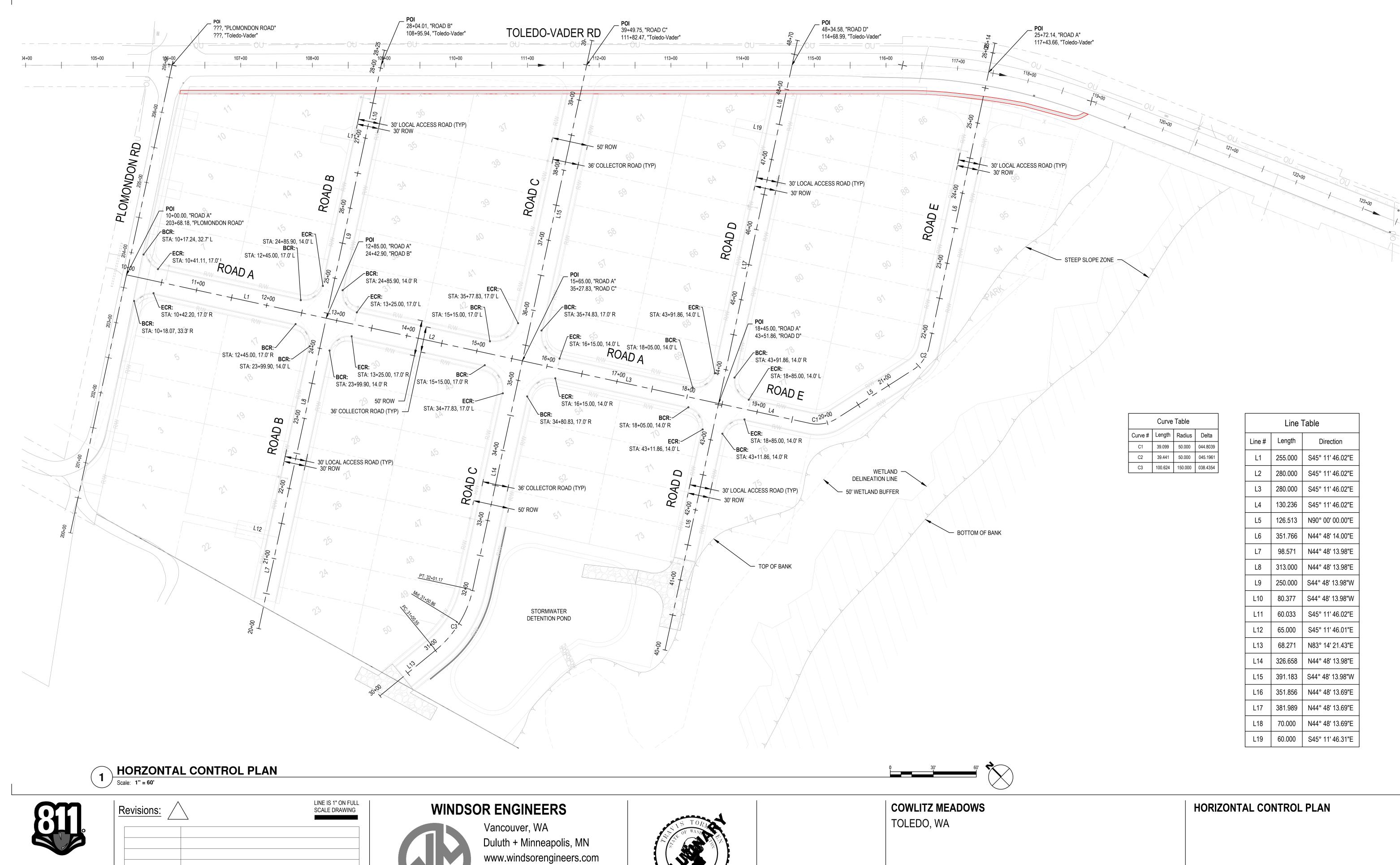
TOLEDO, WA

Project Manager <u>ES</u> Drawn by <u>CKJ</u>

Checked by

CALL 2 BUSINESS DAYS BEFORE YOU DIG. AUTION UTILITY INFORMATION IS APPROXIMATE. ERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.





CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.



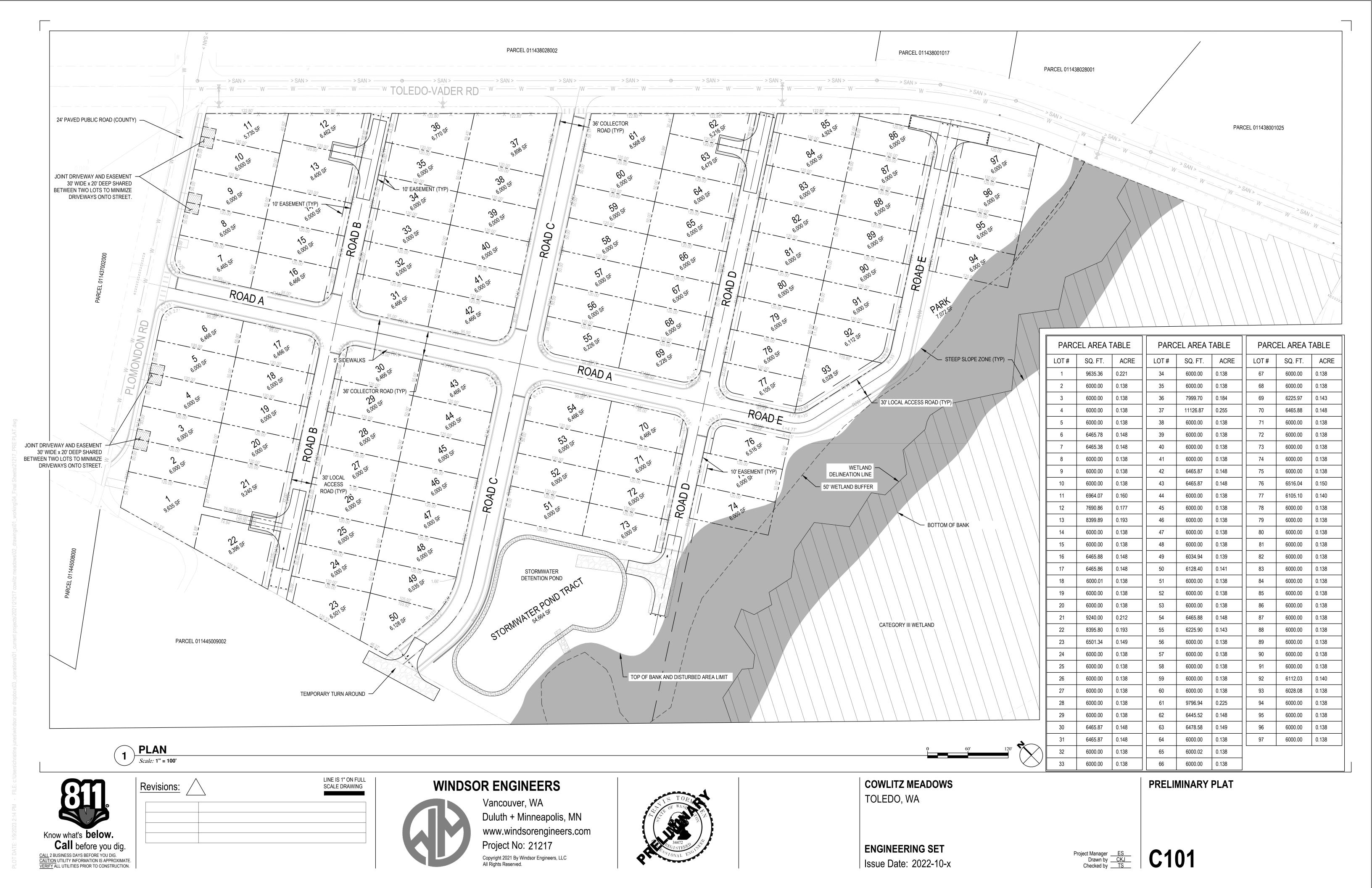
Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.

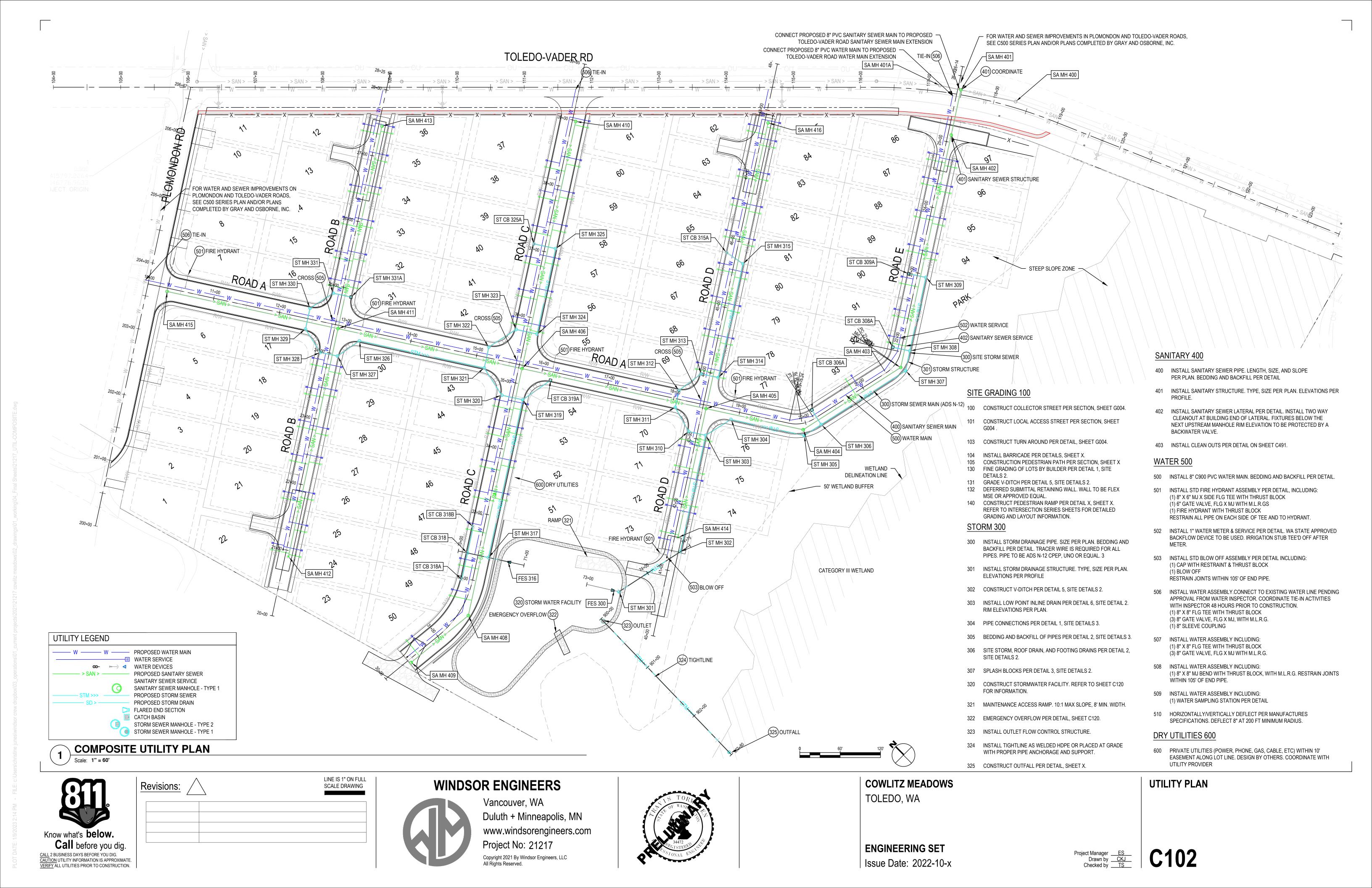


ENGINEERING SET Issue Date: 2022-10-x

Project Manager ES
Drawn by CKJ
Checked by TS

G007







Know what's **below.**Call before you dig.

CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.



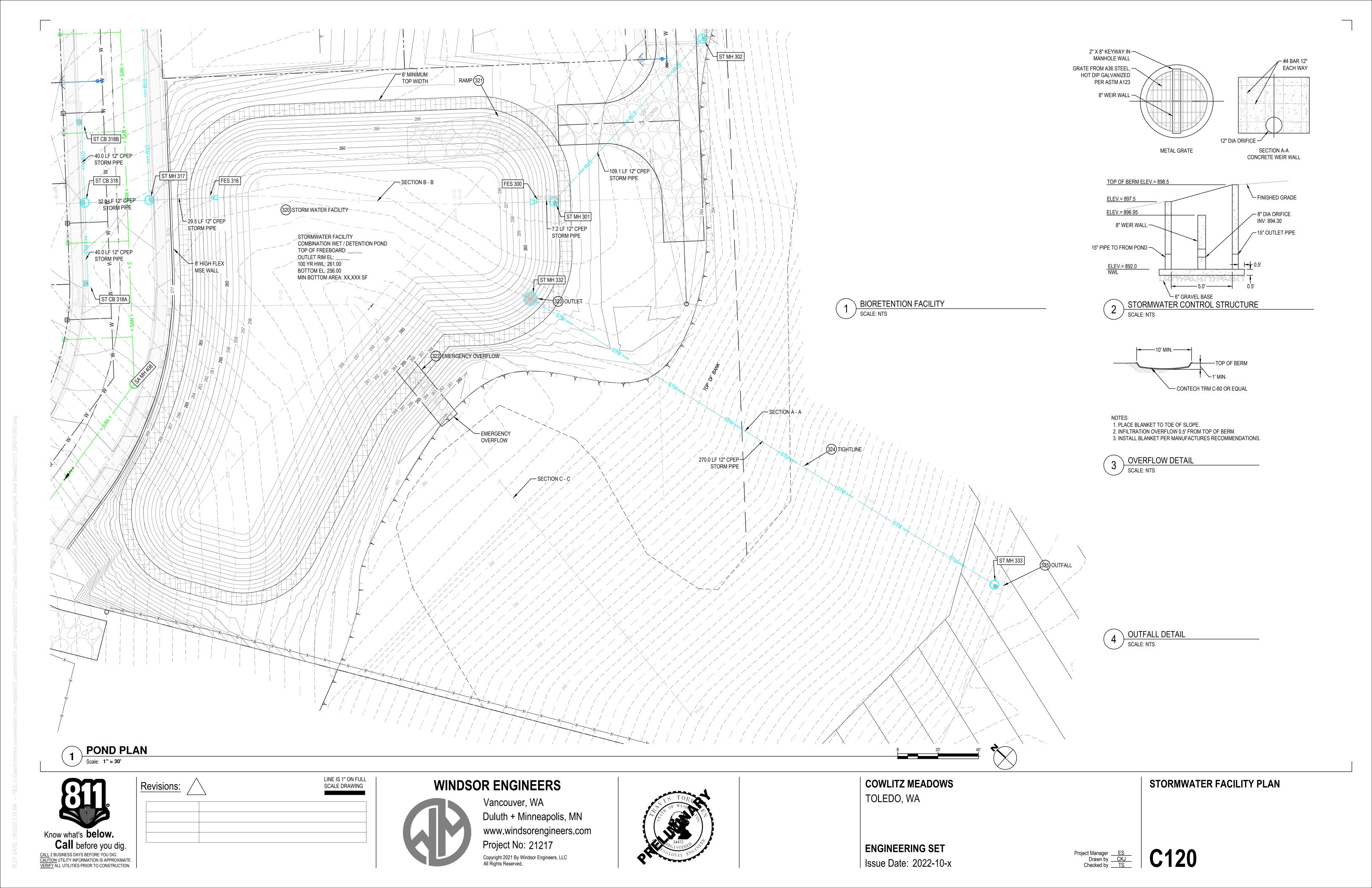


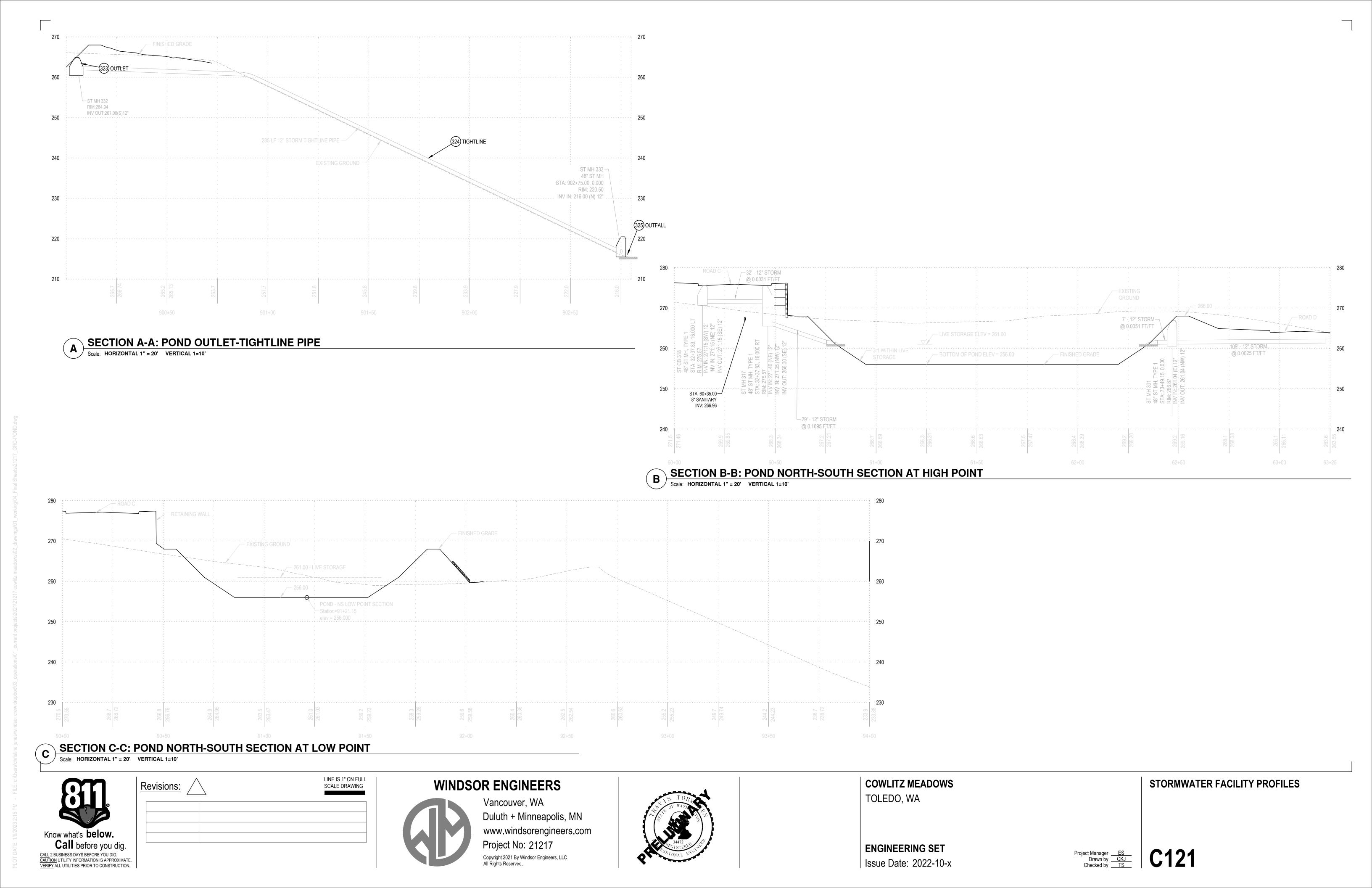
www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.

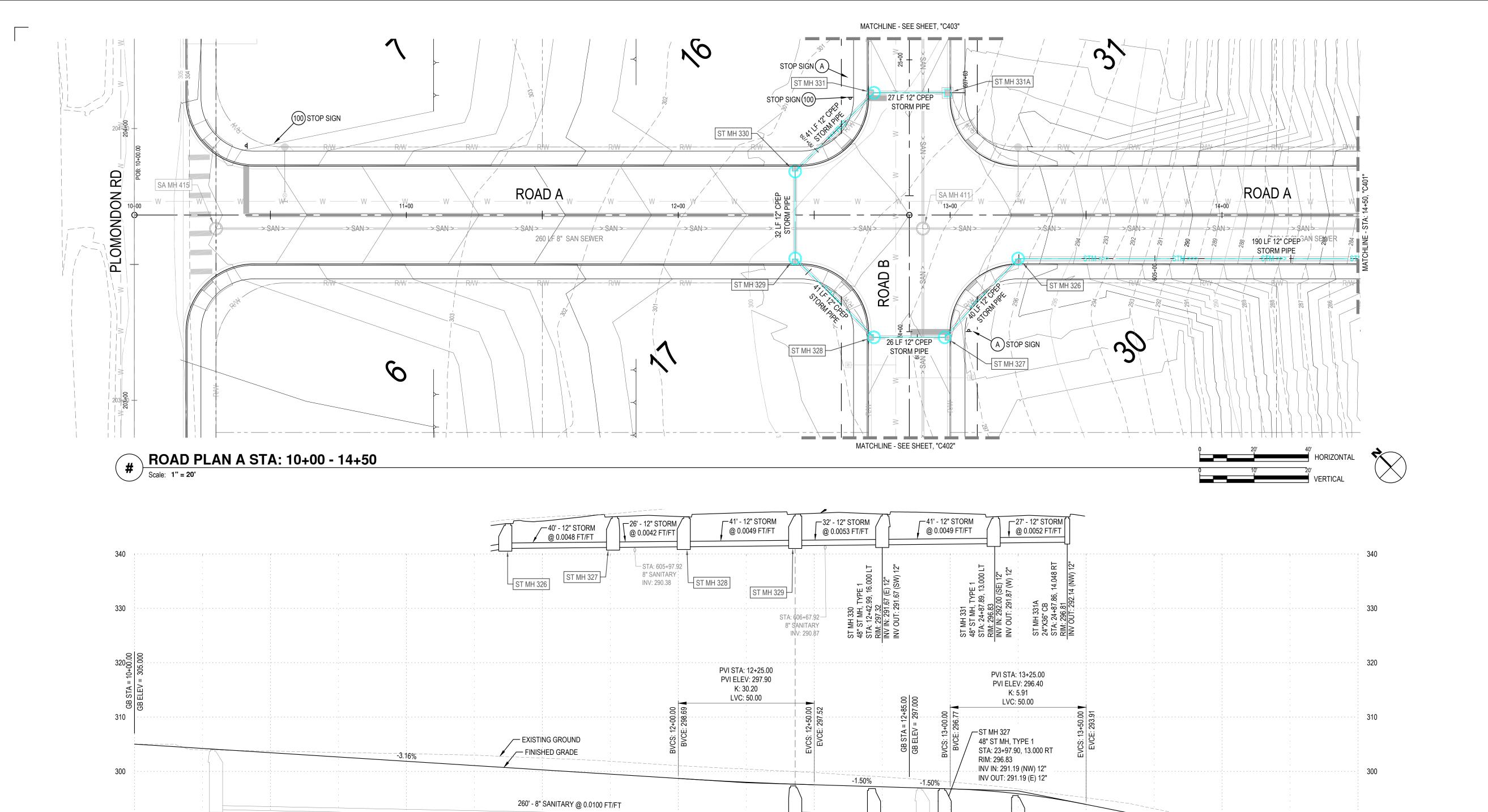


ENGINEERING SET

Issue Date: 2022-10-x







STORM 300

- 300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3
- 301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE
- 302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.
- 303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2. RIM ELEVATIONS PER PLAN.
- 304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.
- 305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.
- 306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2, SITE DETAILS 2.
- 307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.
- 320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120 FOR INFORMATION.
- 321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.
- 322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.
- 323 INSTALL OUTLET FLOW CONTROL STRUCTURE.
- 324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.
- 325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

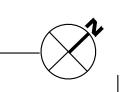
SIGNING / STRIPING 700

700- R1-1, STOP SIGN (30X30)

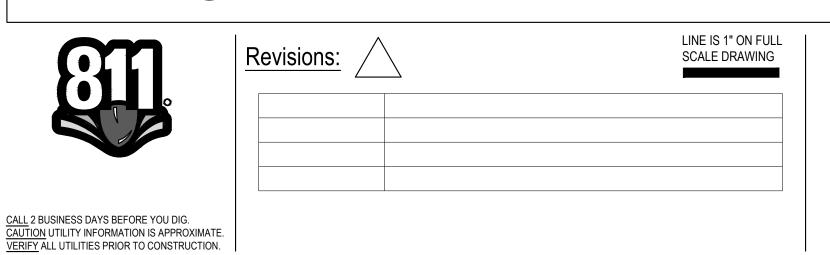
- 701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30)
- 703- R2-1, SPEED LIMIT 35 MPH (24X30)
- 704- R8-3 NO PARKING (24X24) 705- W11-2 PEDESTRIAN TRAFFIC (30X30)
- 706- W15-1 PLAYGROUND (30X30)
- 707- OM4-1 TYPE 4 OBJECT MARKER (18X18)
- 708- W14-2a(R/L) NO OUTLET WITH ARROW (36X8)
- 709- STREET SIGNS (PER CITY OF TOLEDO STANDARDS)
- 710- TYPE 3 BARRICADE "MAINTENANCE ACCESS ONLY" SIGNAGE











ROAD PROFILE A STA: 10+00 - 14+50

Scale: 1" = 20' HORIZONTAL 1=10' VERTICAL

WINDSOR ENGINEERS



Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.



@ 0.0049 FT/FT

12+50

@ 0.0048 FT/FT

26 - 12" STORM @ 0.0042 FT/FT

13+00

COWLITZ MEADOWS TOLEDO, WA

287.9

190' - 12" STORM @ 0.0893 FT/FT
280' - 8" SANITARY @ 0.0646 FT/FT

ENGINEERING SET

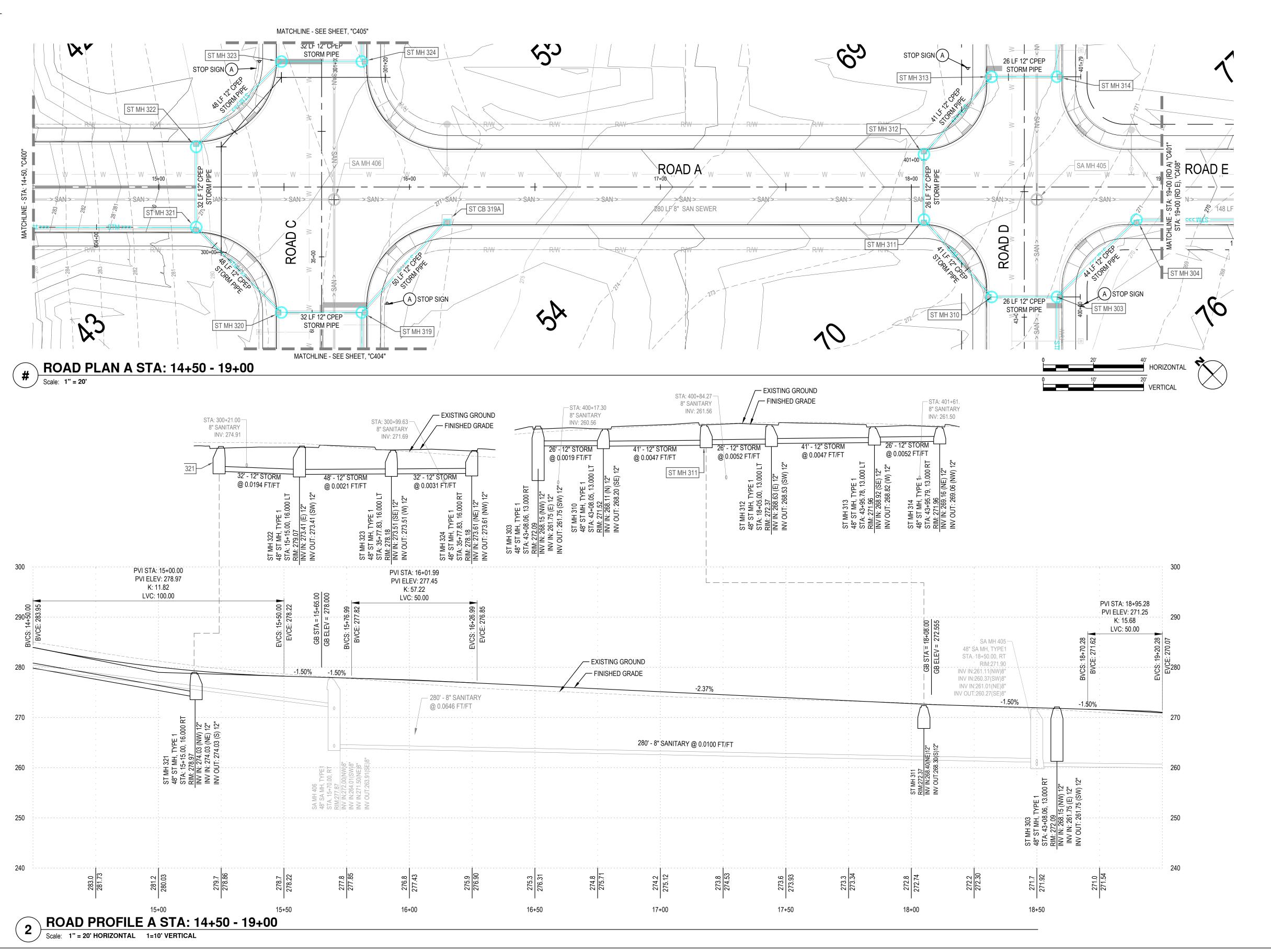
Issue Date: 2022-10-x

Project Manager ES

Drawn by CKJ

Checked by TS

A - ROAD- STORM PLAN & PROFILE STA: 10+00 - 14+50



STORM 300

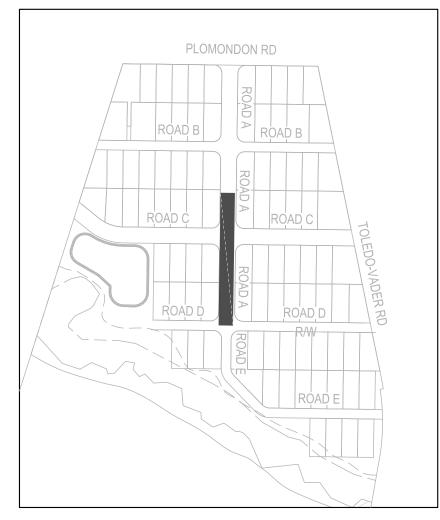
- 300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3
- 301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE
- 302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.
- 303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2. RIM ELEVATIONS PER PLAN.
- 304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.
- 305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.
- 306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2, SITE DETAILS 2.
- 307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.
- 320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120 FOR INFORMATION.
- 321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.
- 322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.
- 323 INSTALL OUTLET FLOW CONTROL STRUCTURE.
- 324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.
- 325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

SIGNING / STRIPING 700

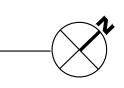
700- R1-1, STOP SIGN (30X30) 701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30)

703- R2-1, SPEED LIMIT 35 MPH (24X30) 704- R8-3 NO PARKING (24X24)

705- W11-2 PEDESTRIAN TRAFFIC (30X30)











LINE IS 1" ON FULL

SCALE DRAWING

Revisions:

CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.



COWLITZ MEADOWS TOLEDO, WA

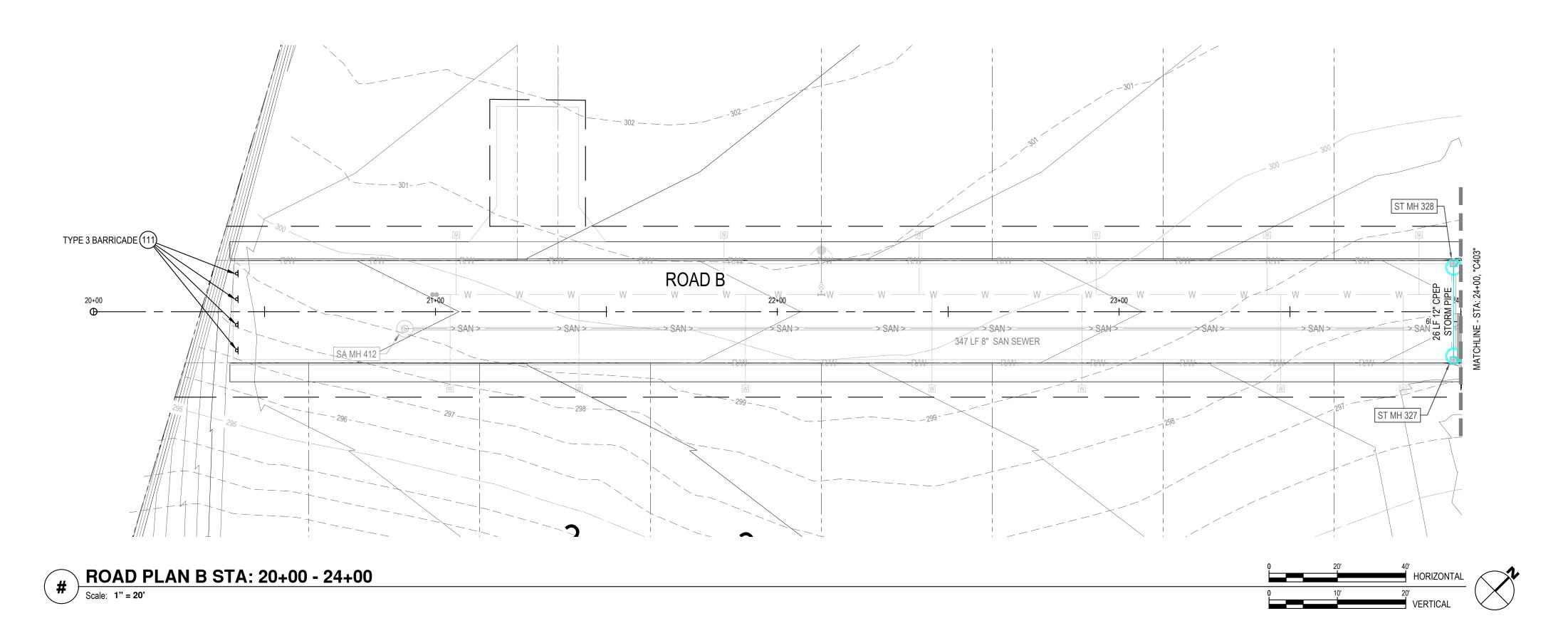
ENGINEERING SET Issue Date: 2022-10-x

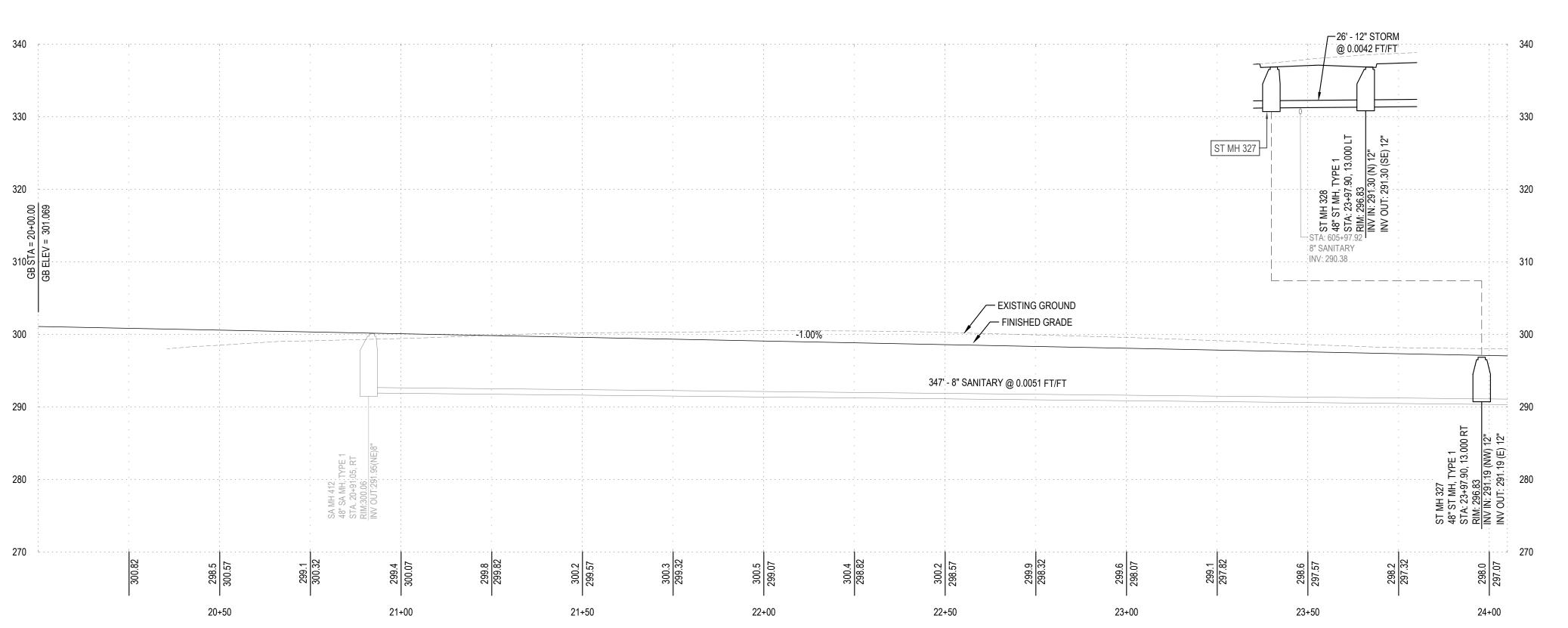
Project Manager ES

Drawn by CKJ

Checked by TS

A - ROAD- STORM PLAN & PROFILE STA: STA 14+50 - 19+00





ROAD PROFILE B STA: 20+00 - 24+00 Scale: 1" = 20' HORIZONTAL 1=10' VERTICAL



LINE IS 1" ON FULL SCALE DRAWING CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

WINDSOR ENGINEERS





COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET



STA: 20+00 - 24+00

B - ROAD- STORM PLAN & PROFILE

C202

STORM 300

300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3

301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN.

303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2.

305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.

306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2,

320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120

321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.

324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.

302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.

304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.

307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.

322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.

323 INSTALL OUTLET FLOW CONTROL STRUCTURE.

325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

ELEVATIONS PER PROFILE

RIM ELEVATIONS PER PLAN.

SITE DETAILS 2.

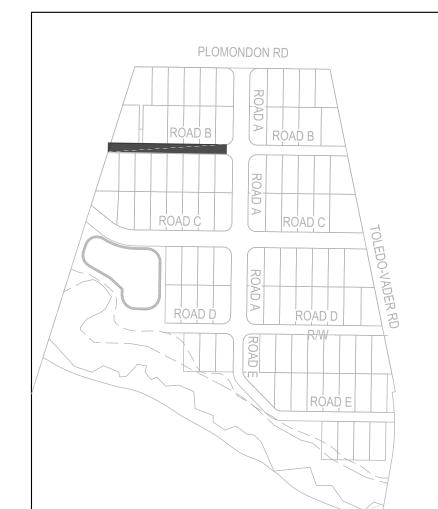
FOR INFORMATION.

SIGNING / STRIPING 700

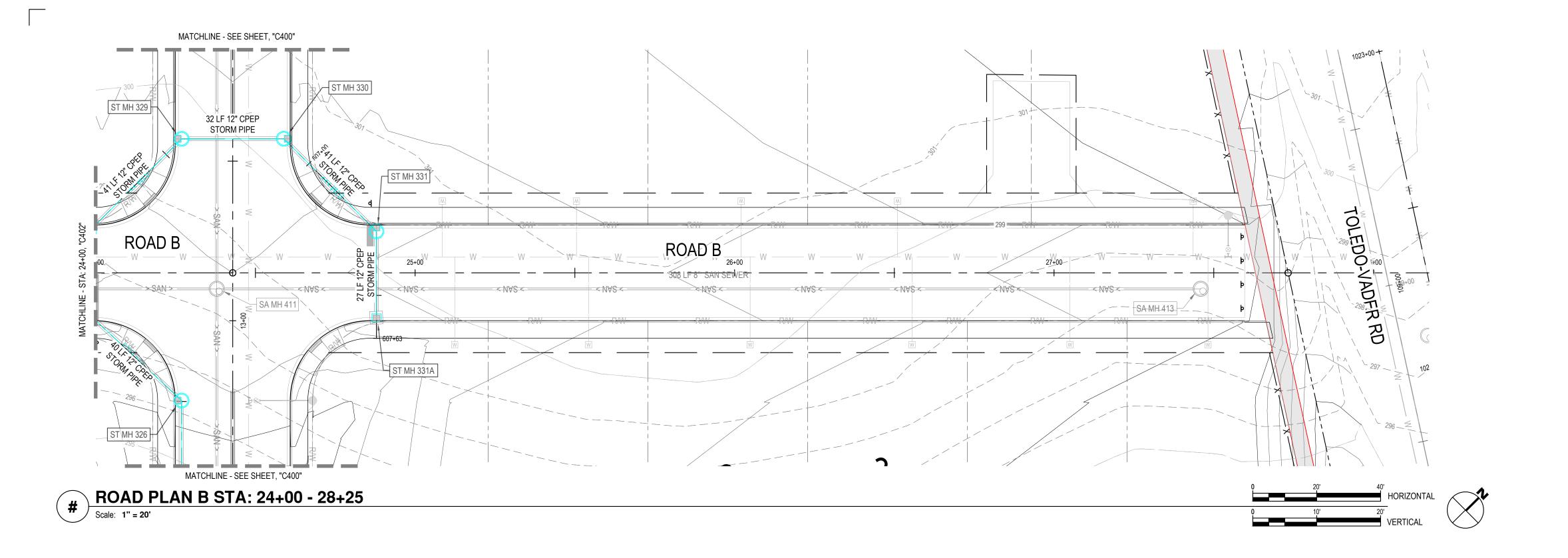
701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30) 703- R2-1, SPEED LIMIT 35 MPH (24X30) 704- R8-3 NO PARKING (24X24)

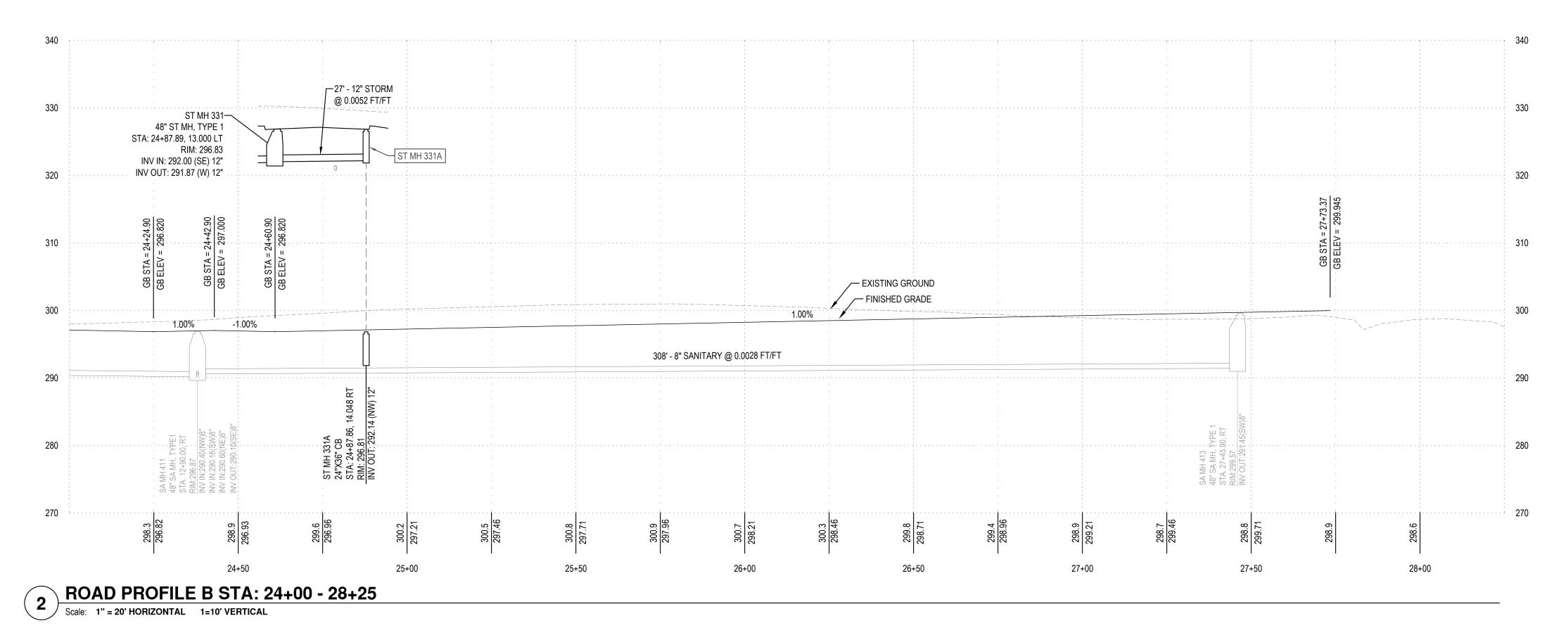
THE MINT OF DEDECTOINN TO VEEL (SUNSON)

700- R1-1, STOP SIGN (30X30)

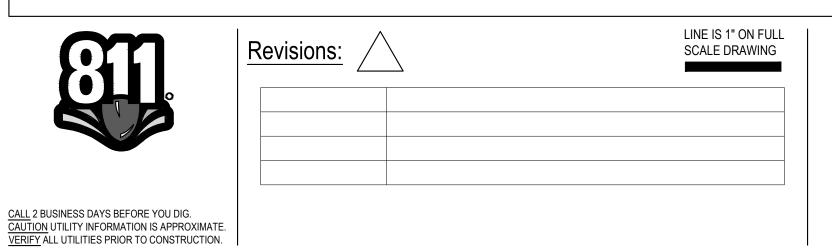












WINDSOR ENGINEERS





COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x

Project Manager ES Drawn by CKJ Checked by TS

B - ROAD- STORM PLAN & PROFILE STA: 24+00 - 28+25

C203

STORM 300

300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3

301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN.

303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2.

305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.

306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2,

320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120

321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.

324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.

302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.

304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.

307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.

322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.

323 INSTALL OUTLET FLOW CONTROL STRUCTURE.

325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

ELEVATIONS PER PROFILE

RIM ELEVATIONS PER PLAN.

SITE DETAILS 2.

FOR INFORMATION.

SIGNING / STRIPING 700

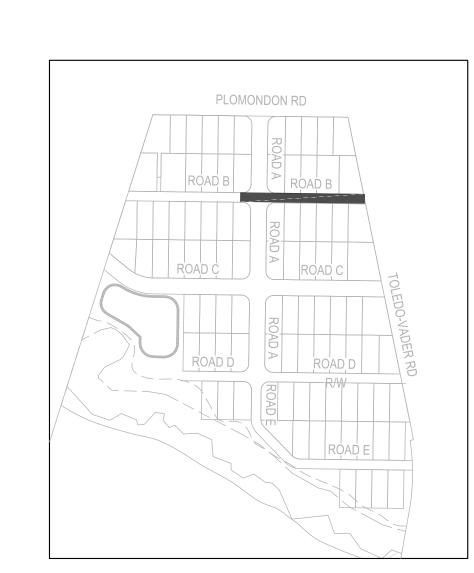
701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30)

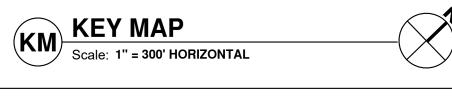
705_ W/11_2 PENESTRIAN TRAFFIC (30X30)

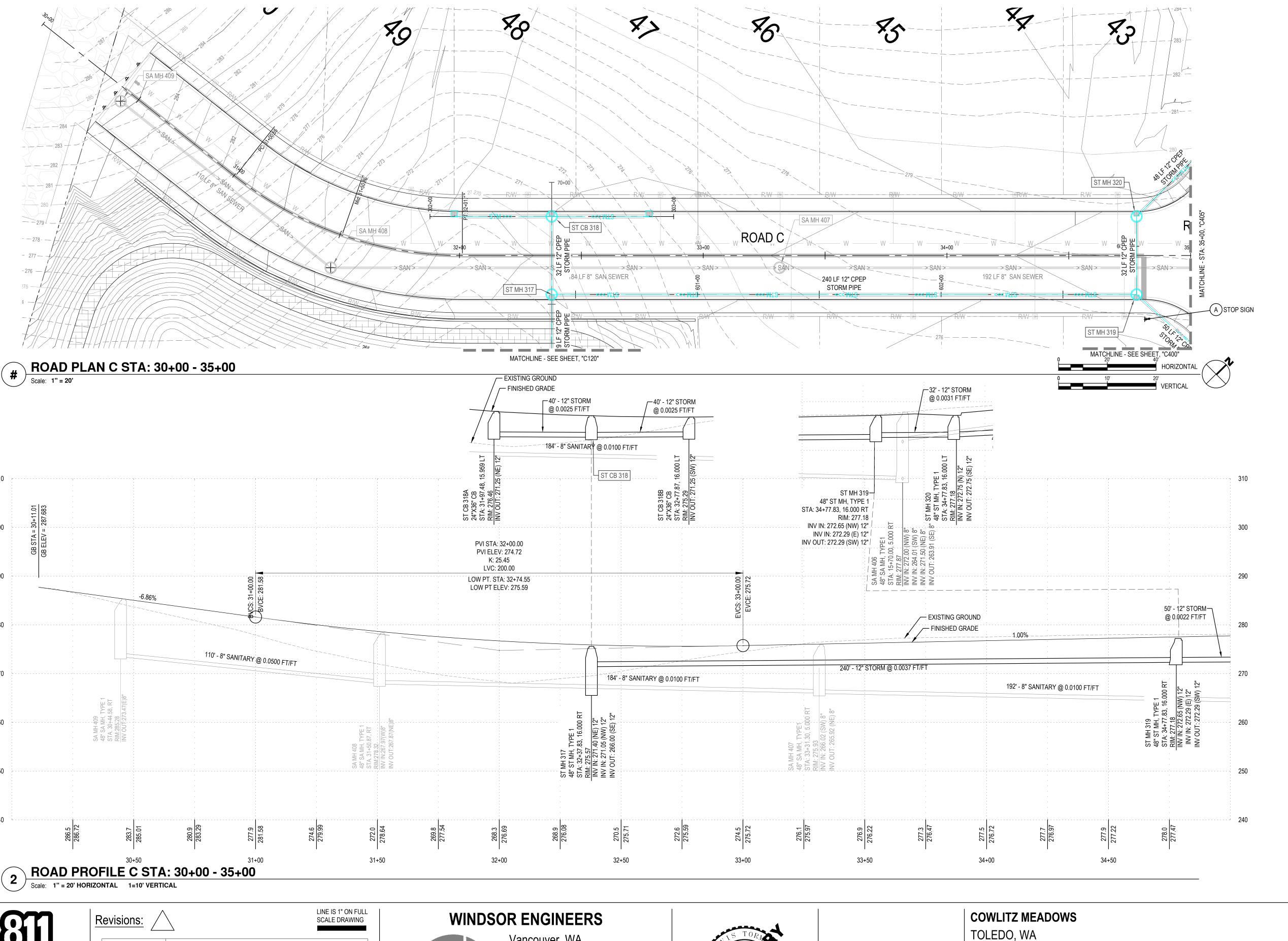
703- R2-1, SPEED LIMIT 35 MPH (24X30)

700- R1-1, STOP SIGN (30X30)

704- R8-3 NO PARKING (24X24)







STORM 300

- 300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3
- 301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE
- 302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.
- 303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2. RIM ELEVATIONS PER PLAN.
- 304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.
- 305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.
- 306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2, SITE DETAILS 2.
- 307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.
- 320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120 FOR INFORMATION.
- 321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.
- 322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.
- 323 INSTALL OUTLET FLOW CONTROL STRUCTURE.
- 324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.
- 325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

SIGNING / STRIPING 700

700- R1-1, STOP SIGN (30X30) 701- R1-5, YIELD TO PEDESTRIANS (18X18)

- 702- R2-1, SPEED LIMIT 25 MPH (24X30)
- 703- R2-1, SPEED LIMIT 35 MPH (24X30) 704- R8-3 NO PARKING (24X24)
- 705- W11-2 PEDESTRIAN TRAFFIC (30X30) 706 M/4E 4 DI AVODOLIND (20V20)

PLOMONDON RD





C204



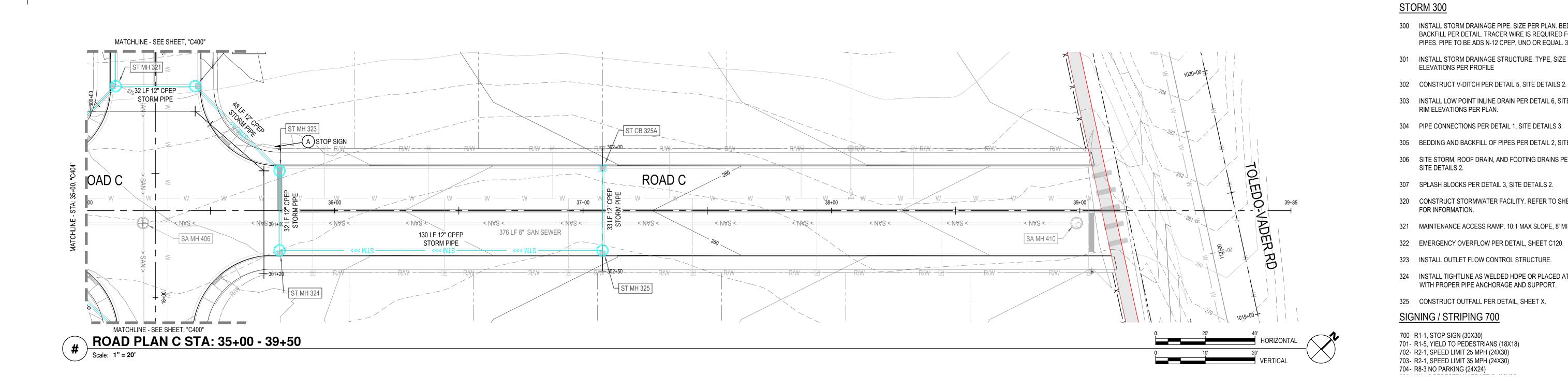
CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

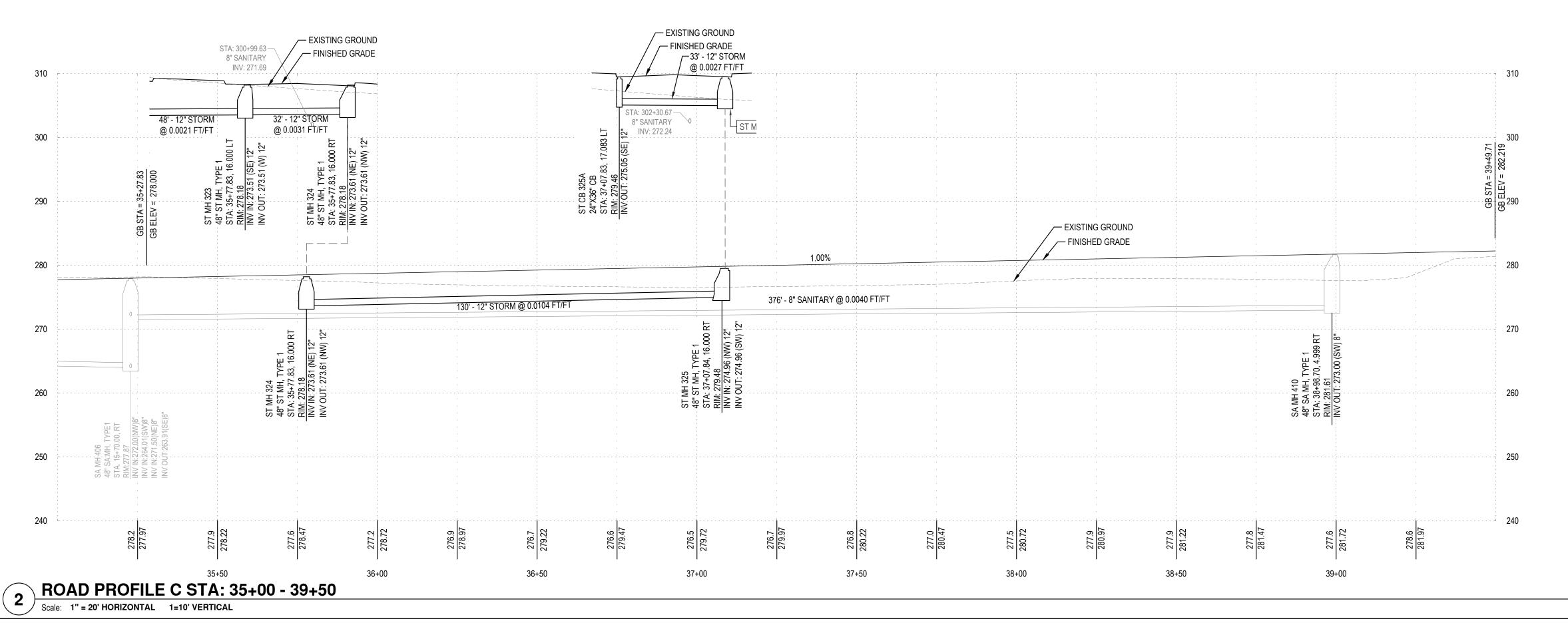
Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.

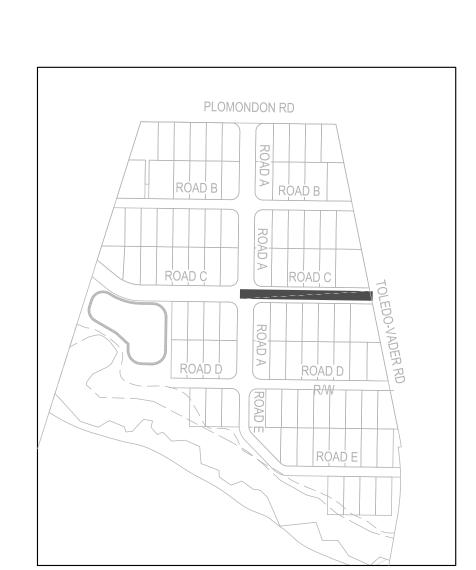


ENGINEERING SET

Issue Date: 2022-10-x







300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL

PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3

301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN.

303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2.

305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.

306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2,

320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120

321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.

324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.

307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.

322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.

323 INSTALL OUTLET FLOW CONTROL STRUCTURE.

325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

ELEVATIONS PER PROFILE

RIM ELEVATIONS PER PLAN.

SITE DETAILS 2.

FOR INFORMATION.

700- R1-1, STOP SIGN (30X30)

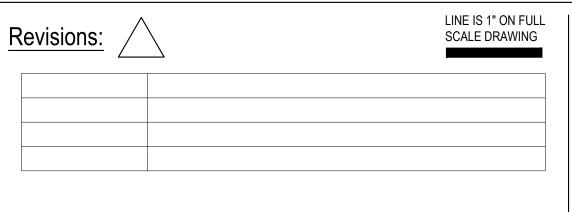
701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30) 703- R2-1, SPEED LIMIT 35 MPH (24X30) 704- R8-3 NO PARKING (24X24)







CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.



WINDSOR ENGINEERS





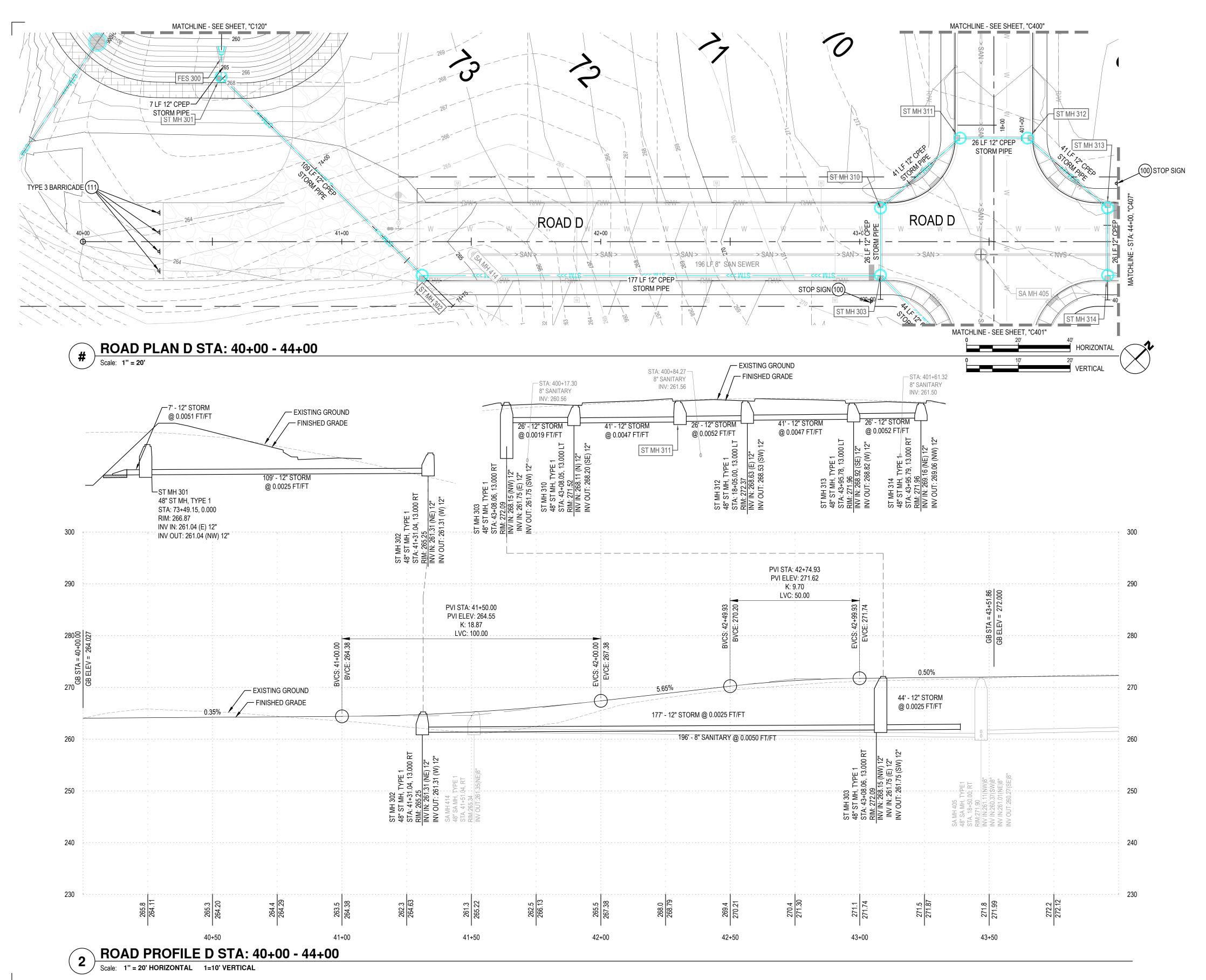
COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x

STA: 35+00 - 39+50

Project Manager ES
Drawn by CKJ
Checked by TS

C205





- 300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3
- 301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE
- 302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.
- 303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2. RIM ELEVATIONS PER PLAN.
- 304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.
- 305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.
- 306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2, SITE DETAILS 2.
- 307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.
- 320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120 FOR INFORMATION.
- 321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.
- 322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.
- 323 INSTALL OUTLET FLOW CONTROL STRUCTURE.
- 324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.
- 325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

SIGNING / STRIPING 700

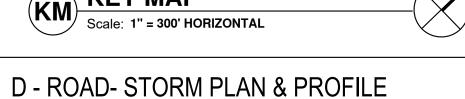
700- R1-1, STOP SIGN (30X30) 701- R1-5, YIELD TO PEDESTRIANS (18X18)

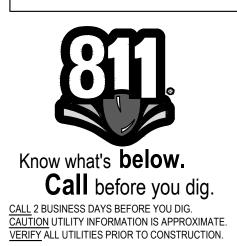
702- R2-1, SPEED LIMIT 25 MPH (24X30) 703- R2-1, SPEED LIMIT 35 MPH (24X30)

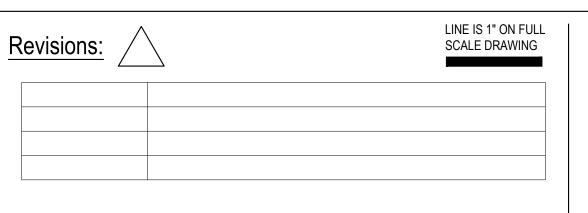
704- R8-3 NO PARKING (24X24) 705_ W/11_2 DEDECTRIAN TRAFFIC (2012)

PLOMONDON RD ROAD C ROAD C









WINDSOR ENGINEERS





COWLITZ MEADOWS TOLEDO, WA

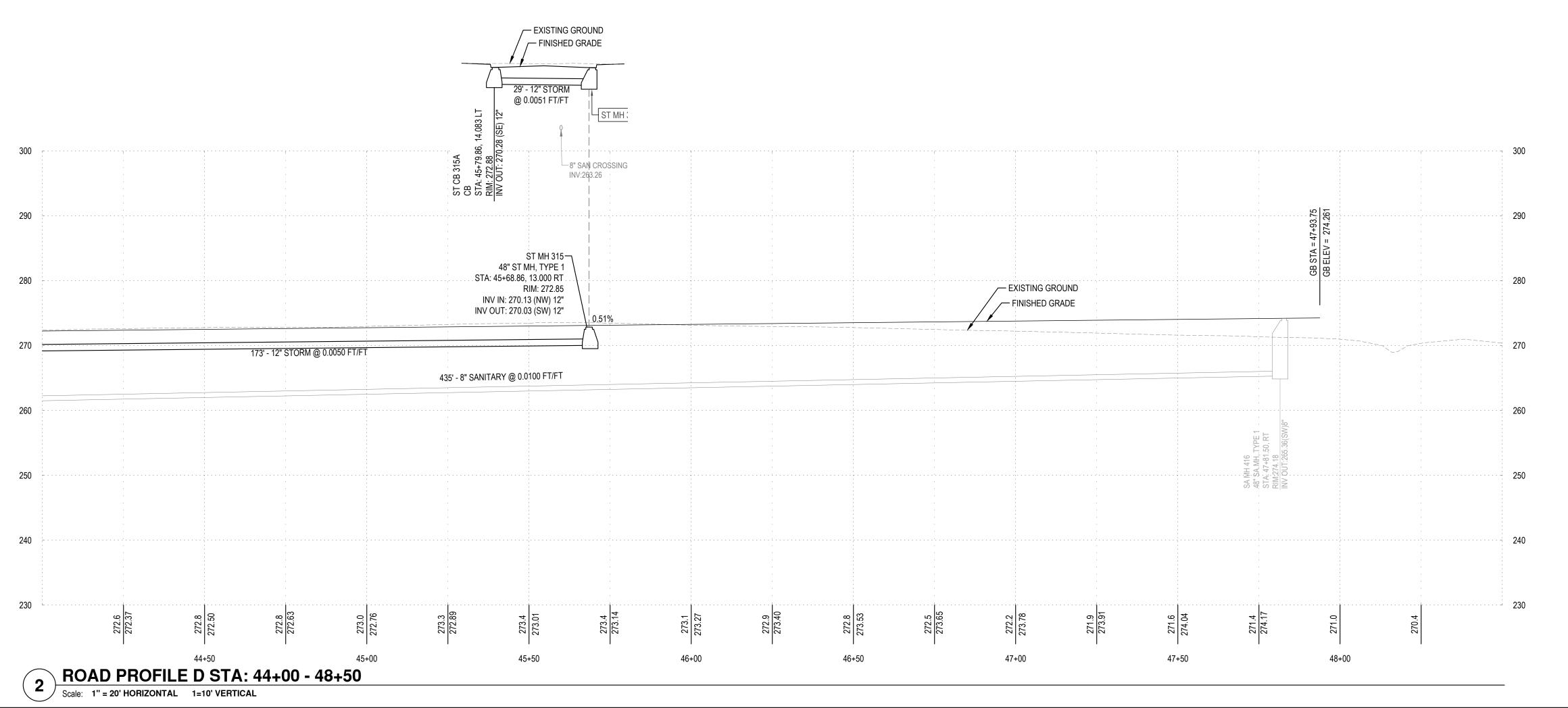
ENGINEERING SET Issue Date: 2022-10-x

Project Manager ES

Drawn by CKJ

Checked by TS

STA: 40+00 - 44+00



STORM 300

- 300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3
- 301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE
- 302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.
- 303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2. RIM ELEVATIONS PER PLAN.
- 304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.
- 305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.
- 306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2, SITE DETAILS 2.
- 307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.
- 320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120 FOR INFORMATION.
- 321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.
- 322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.
- 323 INSTALL OUTLET FLOW CONTROL STRUCTURE.
- 324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.
- 325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

SIGNING / STRIPING 700

700- R1-1, STOP SIGN (30X30) 701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30) 703- R2-1, SPEED LIMIT 35 MPH (24X30)

704- R8-3 NO PARKING (24X24)

705_ W/11_2 DEDECTRIAN TRAFFIC (2012)

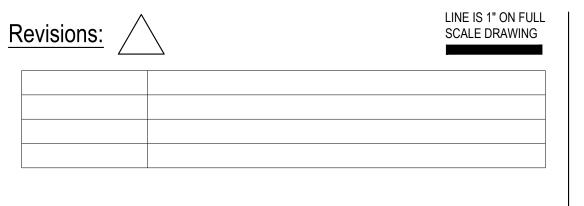






Know what's **below.**Call before you dig.

CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.



WINDSOR ENGINEERS



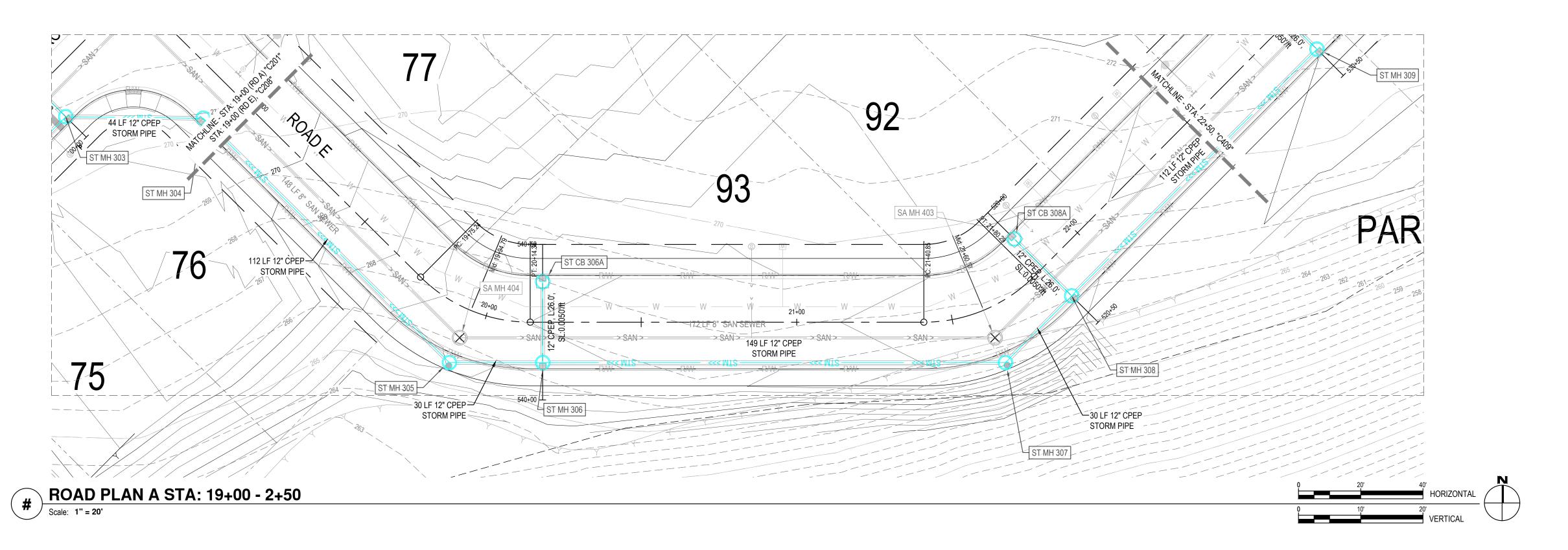


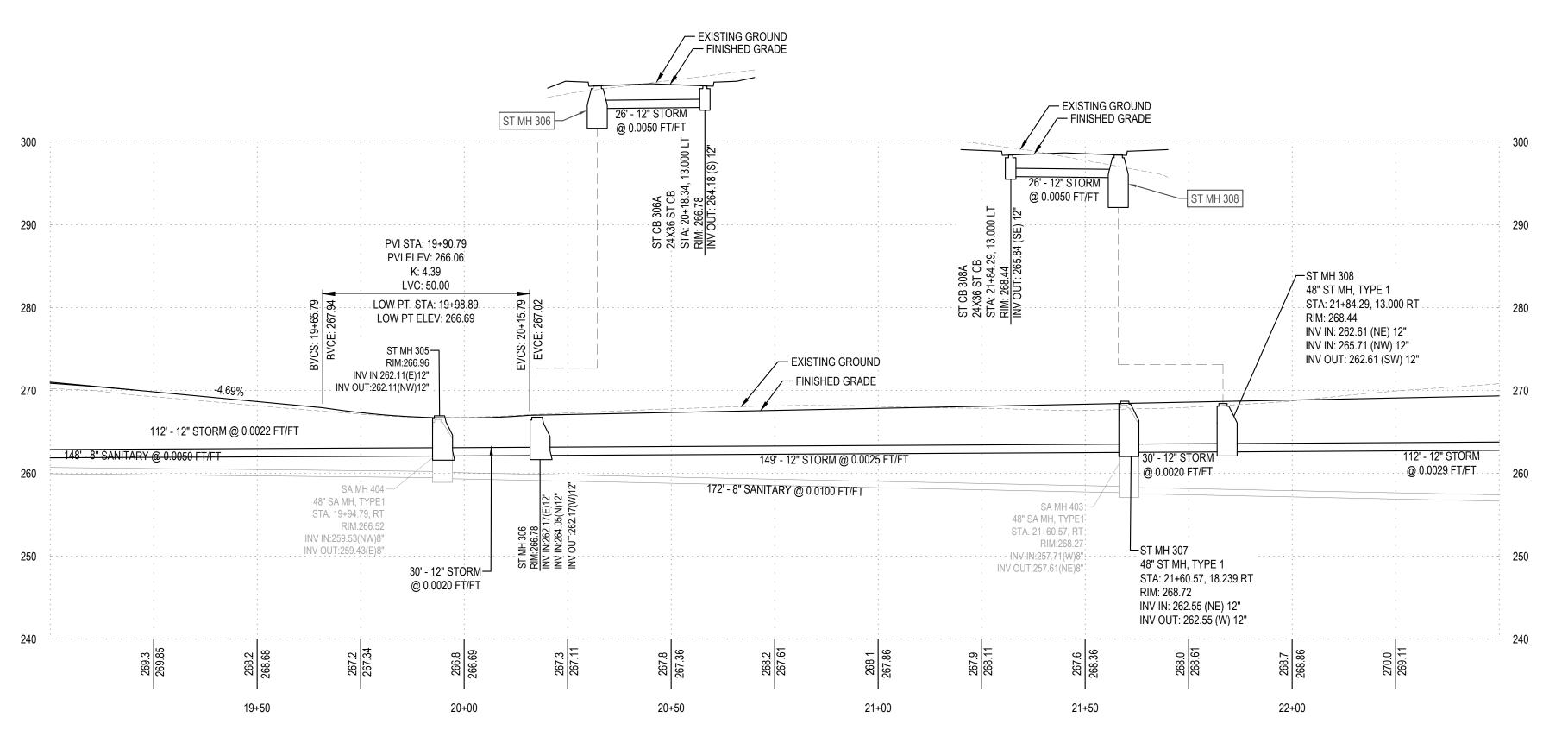
COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x

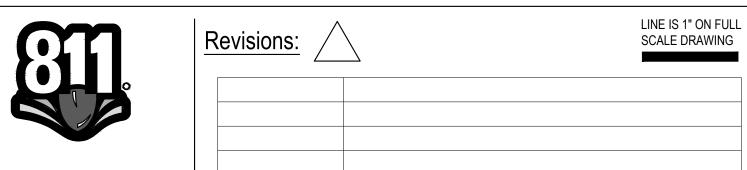
Project Manager ES
Drawn by CKJ
Checked by TS

C207





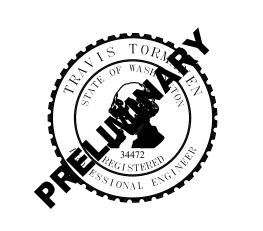




CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

WINDSOR ENGINEERS





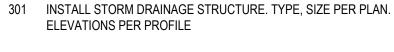
COWLITZ MEADOWS

ENGINEERING SET Issue Date: 2022-10-x

TOLEDO, WA

Project Manager ES
Drawn by CKJ
Checked by TS

E - ROAD- STORM PLAN & PROFILE STA: 19+00 - 22+50



300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3

302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.

STORM 300

303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2. RIM ELEVATIONS PER PLAN.

304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.

305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.

306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2, SITE DETAILS 2.

307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.

320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120 FOR INFORMATION.

321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.

322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.

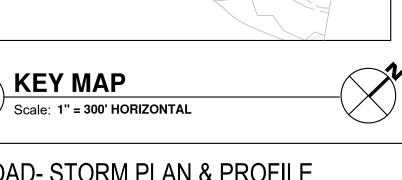
323 INSTALL OUTLET FLOW CONTROL STRUCTURE.

324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.

325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

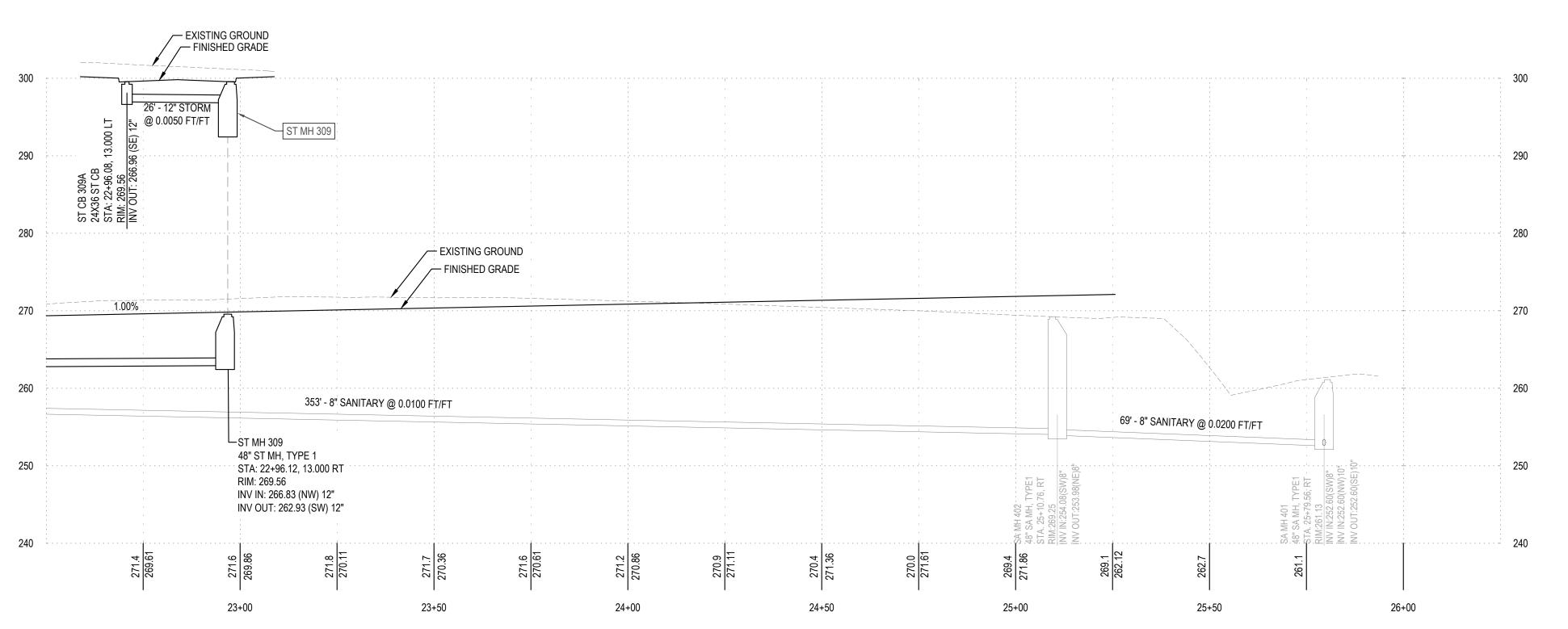
SIGNING / STRIPING 700

700- R1-1, STOP SIGN (30X30) 701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30) 703- R2-1, SPEED LIMIT 35 MPH (24X30) 704- R8-3 NO PARKING (24X24) 705- W11-2 PEDESTRIAN TRAFFIC (30X30)



PLOMONDON RD

ROAD C ROAD C



ROAD PROFILE E STA: 22+50 - 26+00 Scale: 1" = 20' HORIZONTAL 1=10' VERTICAL



COWLITZ MEADOWS TOLEDO, WA

Issue Date: 2022-10-x

E - ROAD- STORM PLAN & PROFILE STA: 22+50 - 26+00

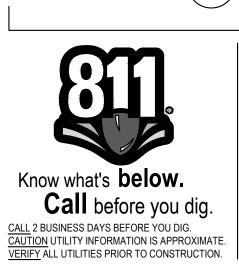
Scale: 1" = 300' HORIZONTAL

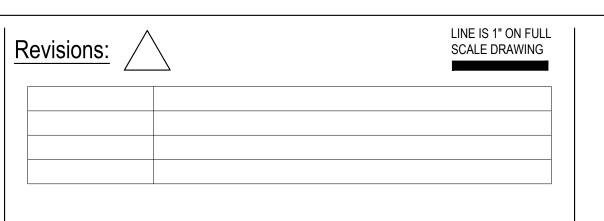
KEY MAP

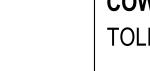
Scale: 1" - 300' HOBE

PLOMONDON RD

ROAD C ROAD C







STORM 300

300 INSTALL STORM DRAINAGE PIPE. SIZE PER PLAN. BEDDING AND BACKFILL PER DETAIL. TRACER WIRE IS REQUIRED FOR ALL PIPES. PIPE TO BE ADS N-12 CPEP, UNO OR EQUAL. 3

301 INSTALL STORM DRAINAGE STRUCTURE. TYPE, SIZE PER PLAN.

303 INSTALL LOW POINT INLINE DRAIN PER DETAIL 6, SITE DETAIL 2.

305 BEDDING AND BACKFILL OF PIPES PER DETAIL 2, SITE DETAILS 3.

306 SITE STORM, ROOF DRAIN, AND FOOTING DRAINS PER DETAIL 2,

320 CONSTRUCT STORMWATER FACILITY. REFER TO SHEET C120

321 MAINTENANCE ACCESS RAMP. 10:1 MAX SLOPE, 8' MIN. WIDTH.

324 INSTALL TIGHTLINE AS WELDED HDPE OR PLACED AT GRADE WITH PROPER PIPE ANCHORAGE AND SUPPORT.

302 CONSTRUCT V-DITCH PER DETAIL 5, SITE DETAILS 2.

304 PIPE CONNECTIONS PER DETAIL 1, SITE DETAILS 3.

307 SPLASH BLOCKS PER DETAIL 3, SITE DETAILS 2.

322 EMERGENCY OVERFLOW PER DETAIL, SHEET C120.

323 INSTALL OUTLET FLOW CONTROL STRUCTURE.

325 CONSTRUCT OUTFALL PER DETAIL, SHEET X.

ELEVATIONS PER PROFILE

RIM ELEVATIONS PER PLAN.

SITE DETAILS 2.

FOR INFORMATION.

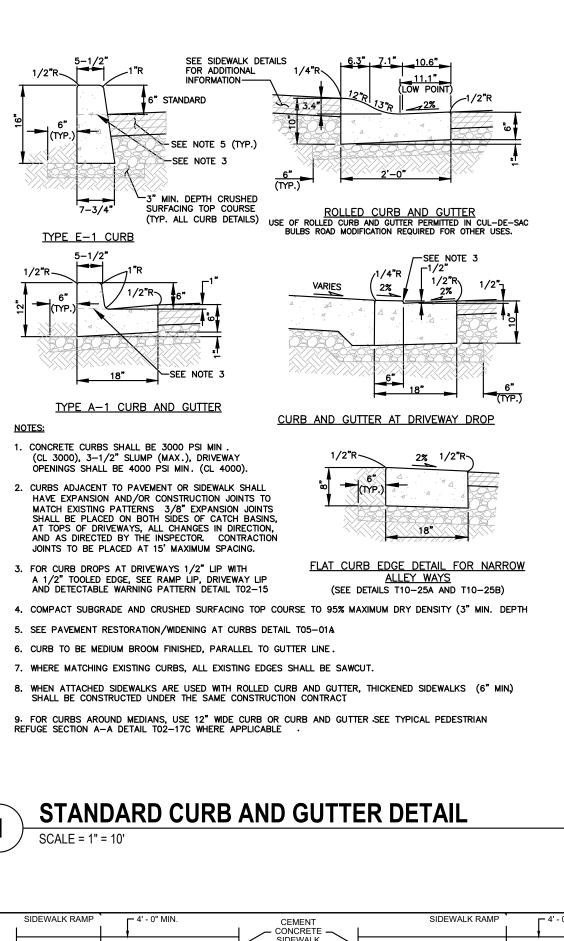
SIGNING / STRIPING 700

701- R1-5, YIELD TO PEDESTRIANS (18X18) 702- R2-1, SPEED LIMIT 25 MPH (24X30) 703- R2-1, SPEED LIMIT 35 MPH (24X30)

705- W11-2 PEDESTRIAN TRAFFIC (30X30)

700- R1-1, STOP SIGN (30X30)

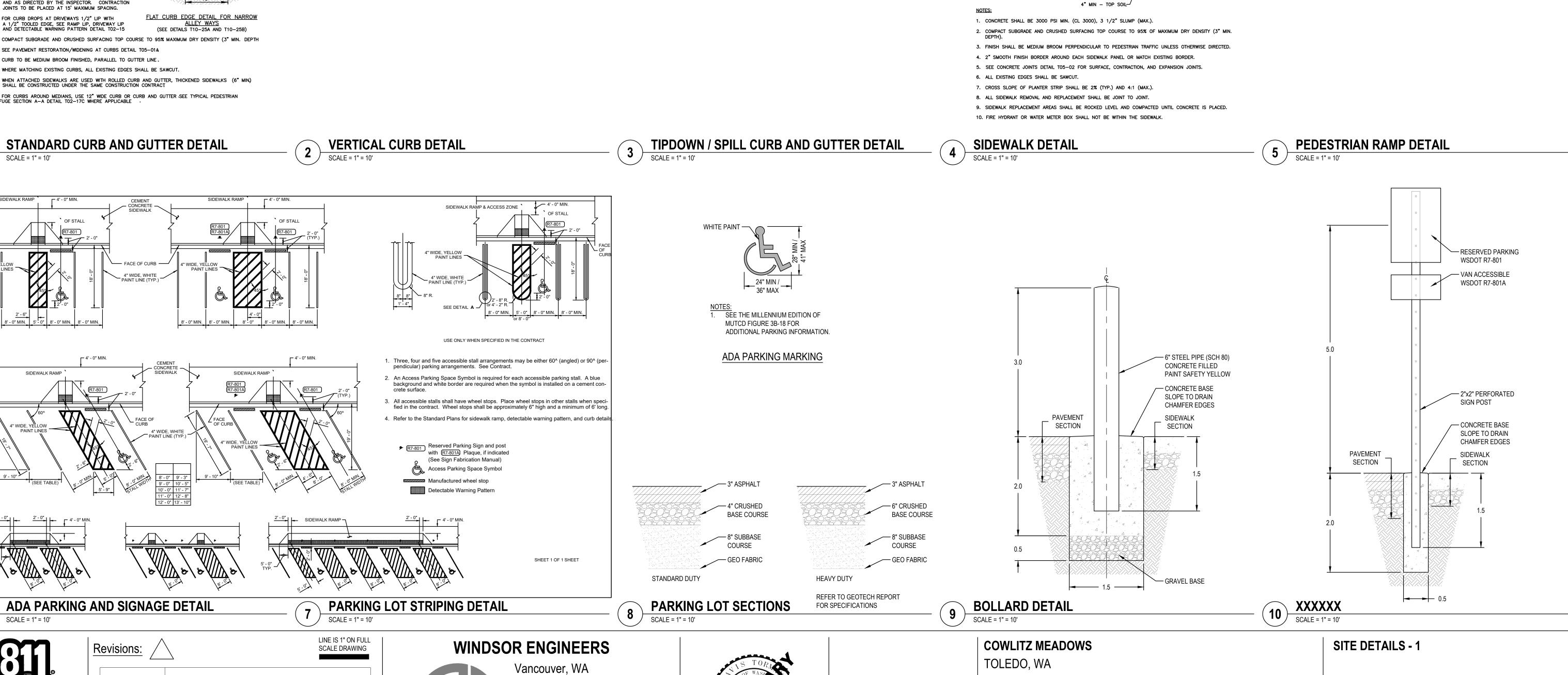
704- R8-3 NO PARKING (24X24)



Know what's **below.**

Call before you dig.

CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.



Duluth + Minneapolis, MN

Project No: 21217

All Rights Reserved.

Copyright 2021 By Windsor Engineers, LLC

www.windsorengineers.com

NOMINAL JOINT SPACING:

SURFACE JOINT AT 5'.

③ EXPANSION JOINT AT STRUCTURES, OBSTRUCTION, OR AS DIRECTED BY THE INSPECTOR.

CONCRETE CURBS
DETAIL TO1-01A

C280

Project Manager ES
Drawn by CKJ
Checked by TS

-EXPANSION JOINT DETAIL T05-02 ③

② CONTRACTION JOINT AT 15'.

←1/2" DEEP SURFACE ①

∠4" CL 3000 CONCRETE

─3" MIN. CRUSHED SURFACING TOP COURSE

NEW SIDEWALK VARIES
5'-0" MIN. 6" (TVP.)

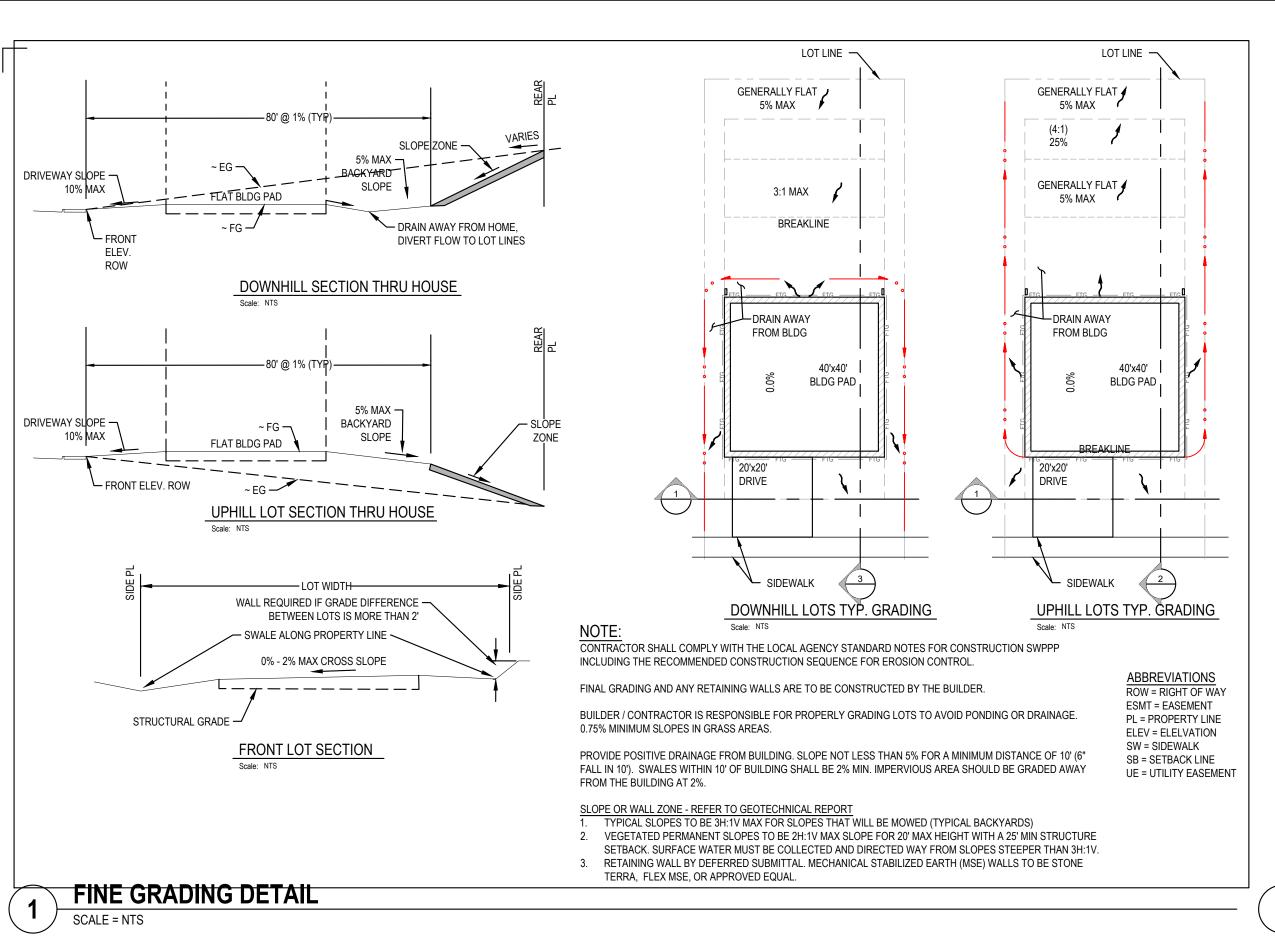
6" (TYP.)

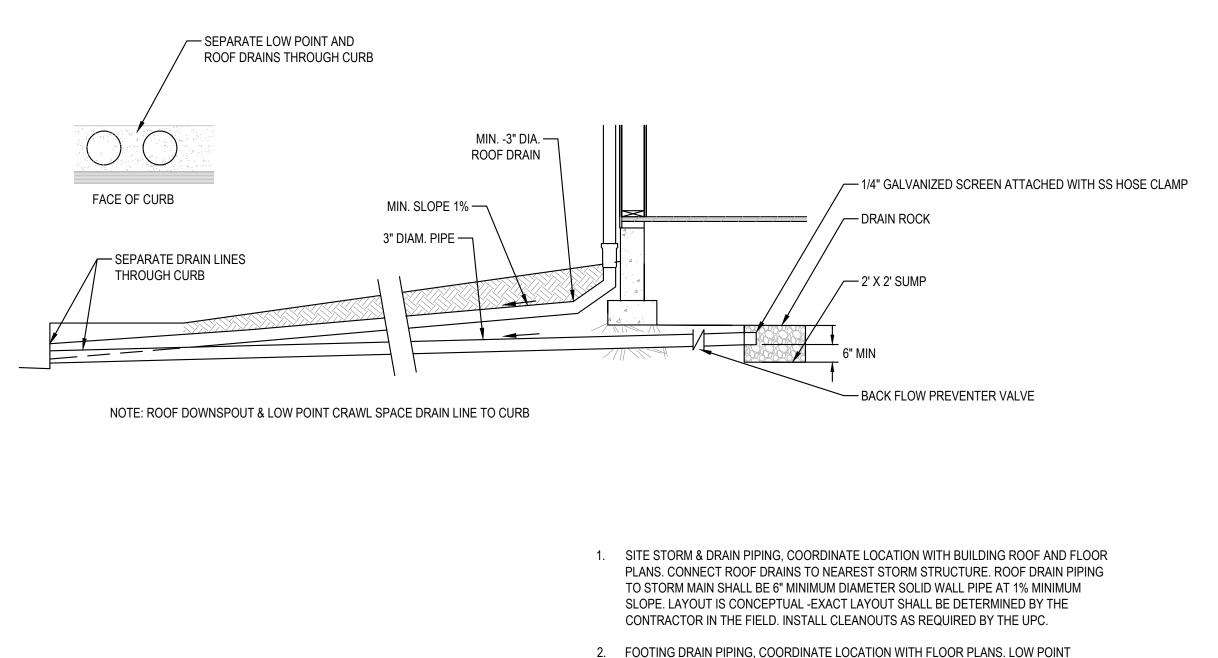
② CONTRACTION JOINT

3" MIN. CRUSHED SURFACING TOP COURSE—

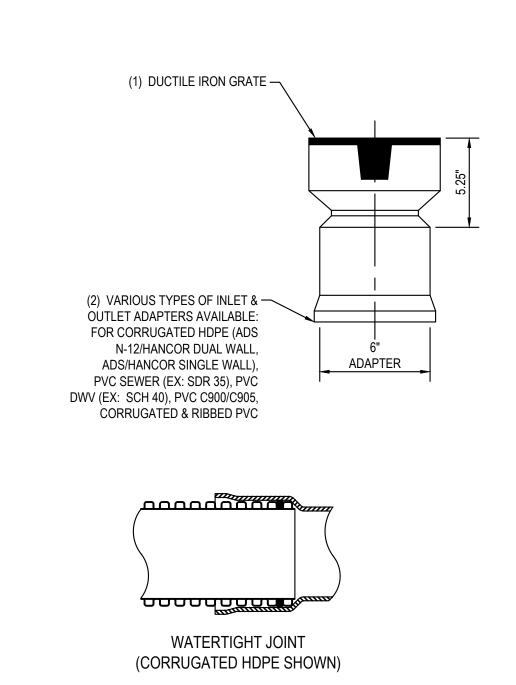
ENGINEERING SET

Issue Date: 2022-10-x





GRATE/COVER -TOP SOIL -DEPTH AND 0.75 % MIN SLOPE IN GRASSY AREAS. INSTALL 6' WIDE EROSION CONTROL MATTING BLANKET OVER HAND CAST EROSION CONTROL SEED MIX. - THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING ___ 4:1 SLOPE THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321 BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

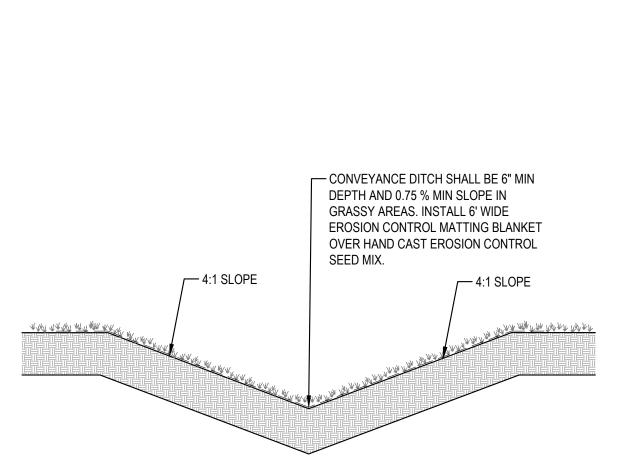


-HOUSE

SPLASH BLOCK DETAIL

- ROOF DOWNSPOUT

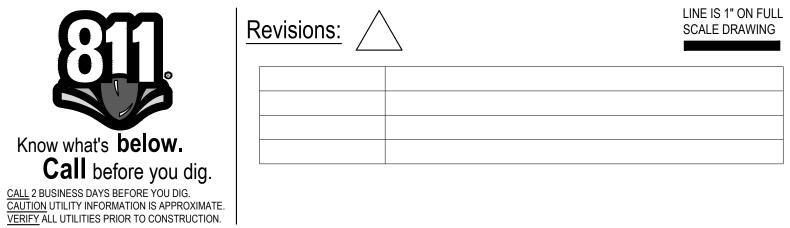
- SPLASH BLOCK



ROOF DOWNSPOUT / DRAIN LINE TO CURB DETAIL









WINDSOR ENGINEERS

Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.



"V" DITCH DETAIL

Scale: NTS

INLINE DRAIN

COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET

Project Manager ES
Drawn by CKJ
Checked by TS

SITE DETAILS - 2

Issue Date: 2022-10-x

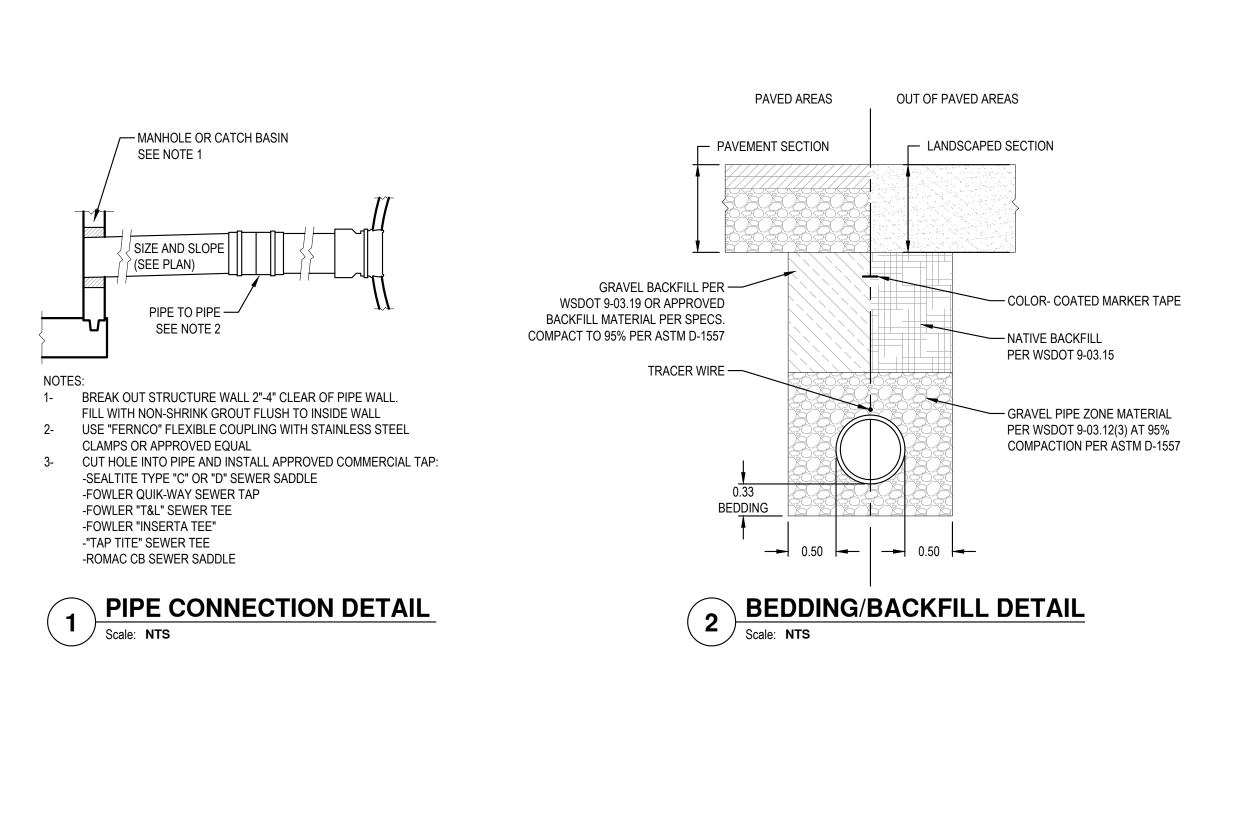
PERFORATED DRAIN TO BE FLAT ADJACENT TO FOOTING. PIPING NOT ADJACENT TO

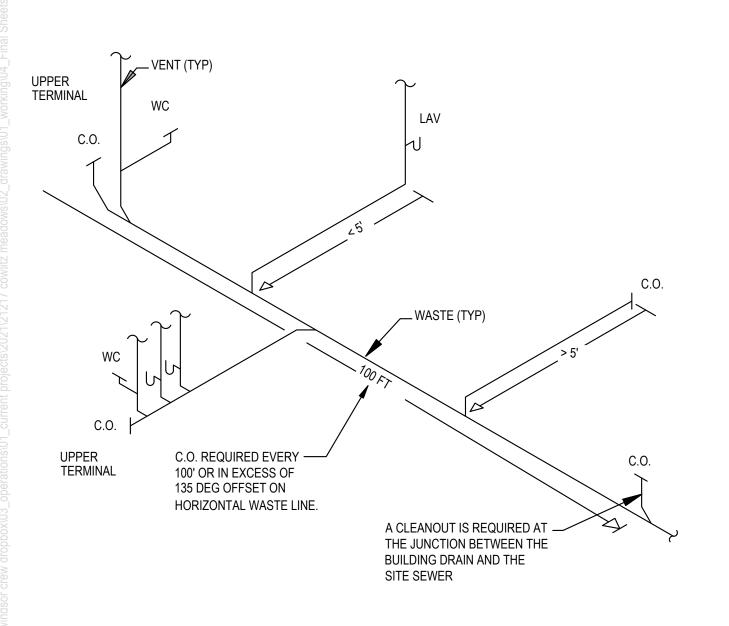
FOOTING TO BE SOLID WALL PIPE AT 1% MINIMUM SLOPE. LAYOUT IS CONCEPTUAL -

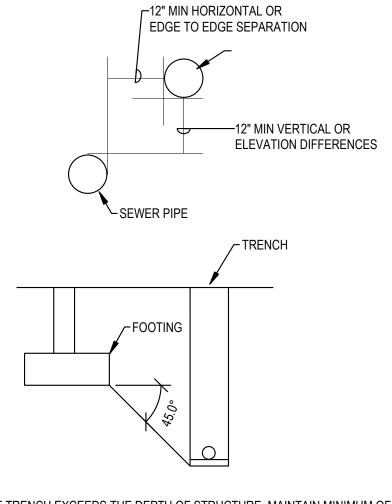
EXACT LAYOUT SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. INSTALL

3. PROVIDE KNOCKOUT FOR STORM STUB AT STRUCTURE PROVIDE 2.5" MIN COVER (TYP)

CLEANOUTS AS REQUIRED BY THE UPC.

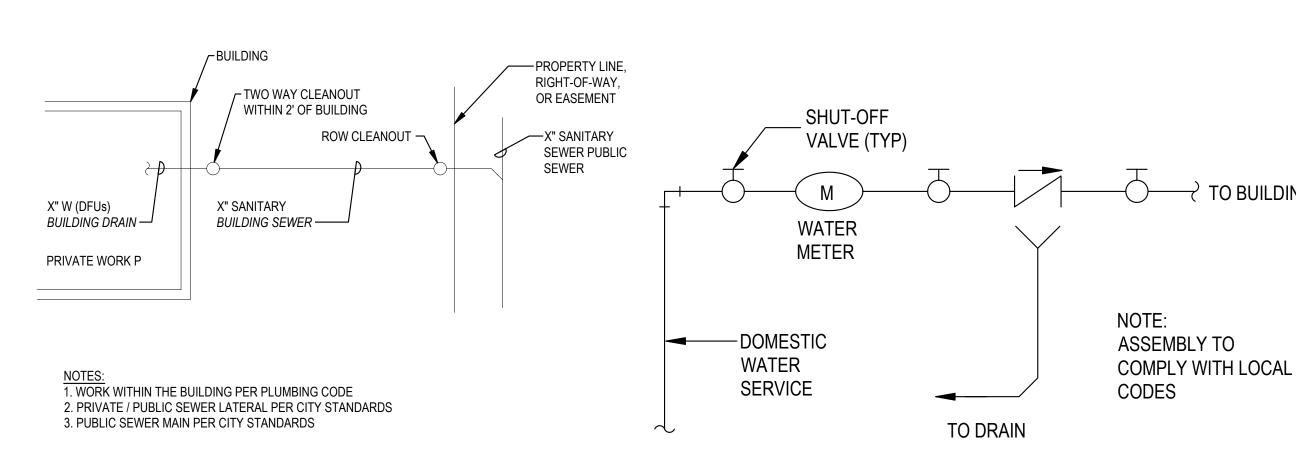


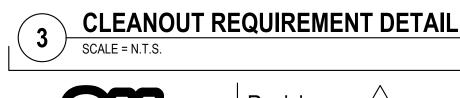




NOTES:

1. WHERE TRENCH EXCEEDS THE DEPTH OF STRUCTURE, MAINTAIN MINIMUM OF 45 DEGREE ANGLE FROM BOTTOM OF FOOTING TO BOTTOM OF TRENCH.

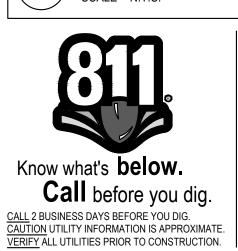




TYP UPC WATER & SEWER SEPARATION SCALE = N.T.S.

TYP UPC BUILDING DRAIN TO SEWER TO PUBLIC SCALE = 1" = 10'





LINE IS 1" ON FULL Revisions: SCALE DRAWING

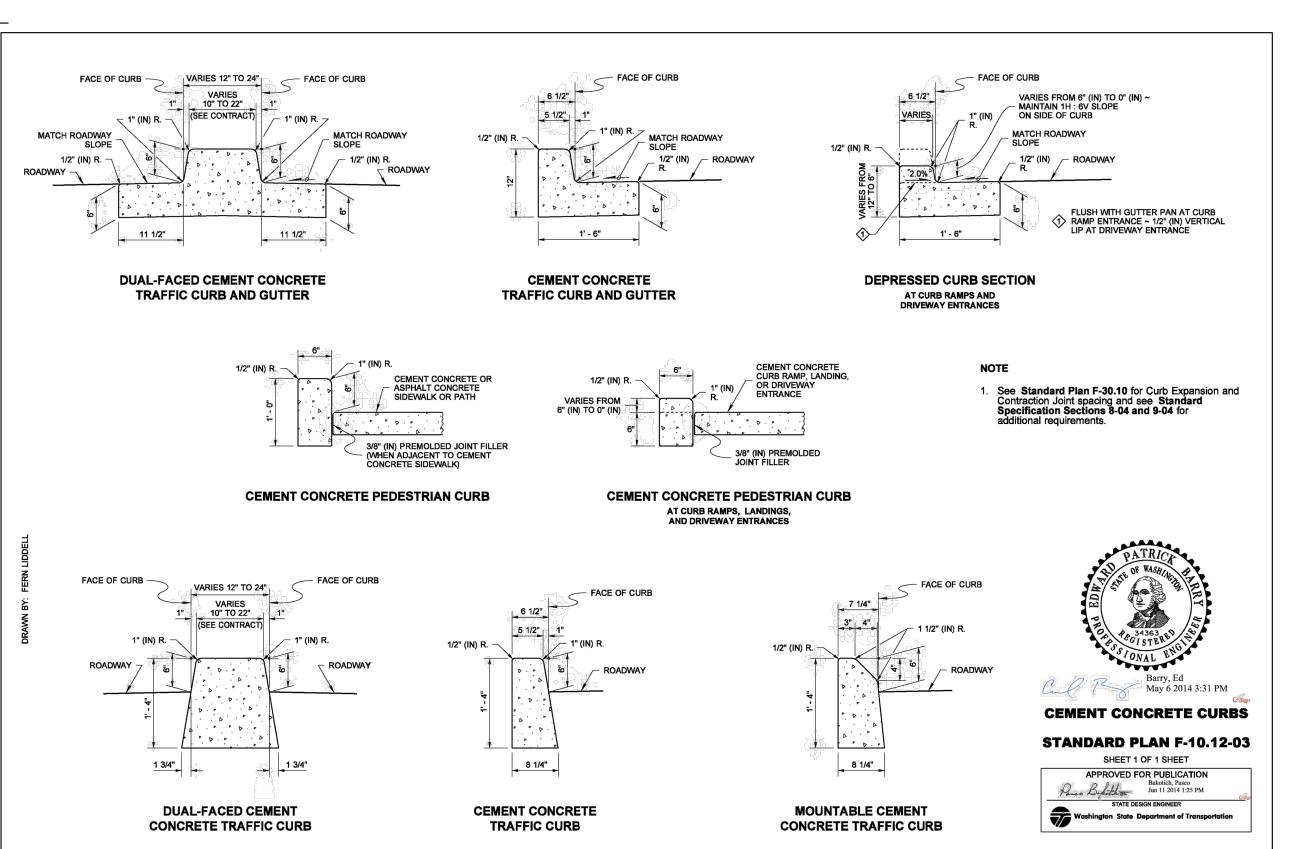


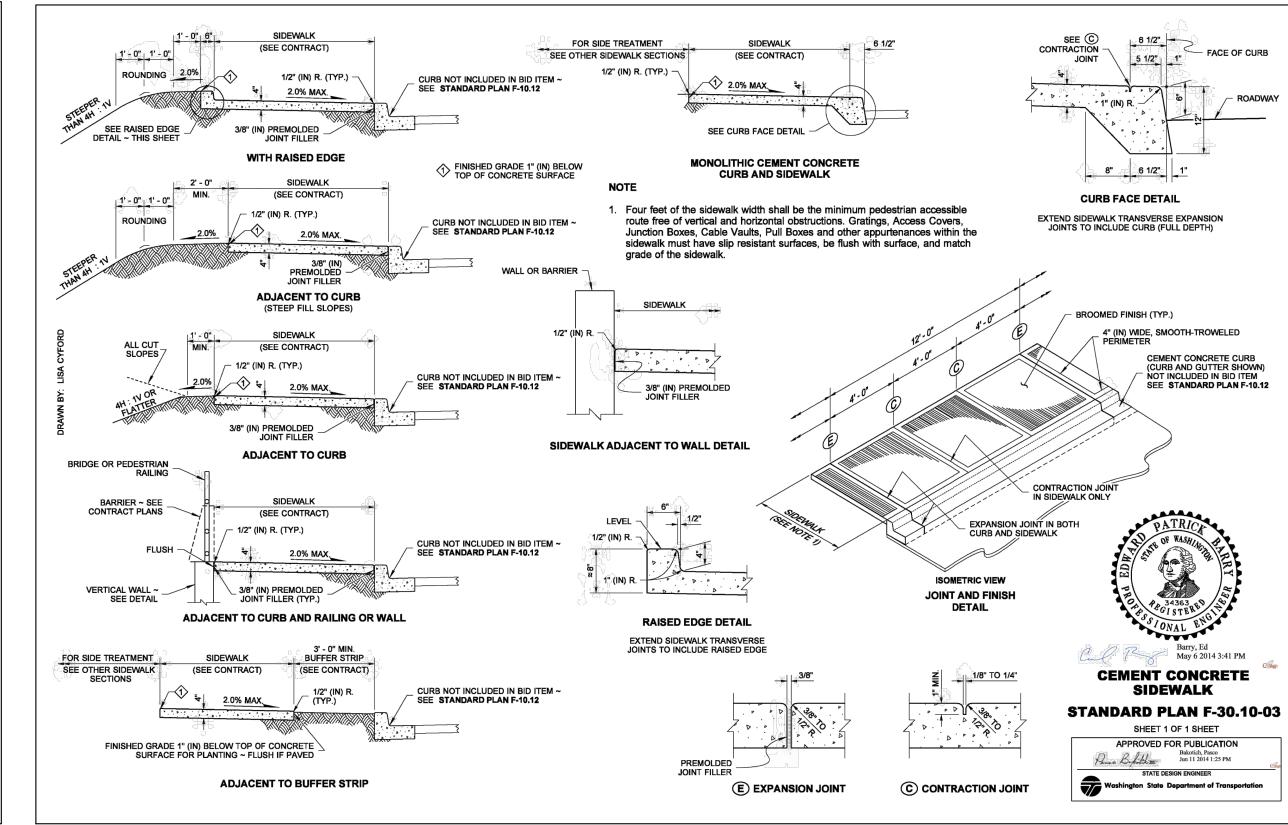
Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.



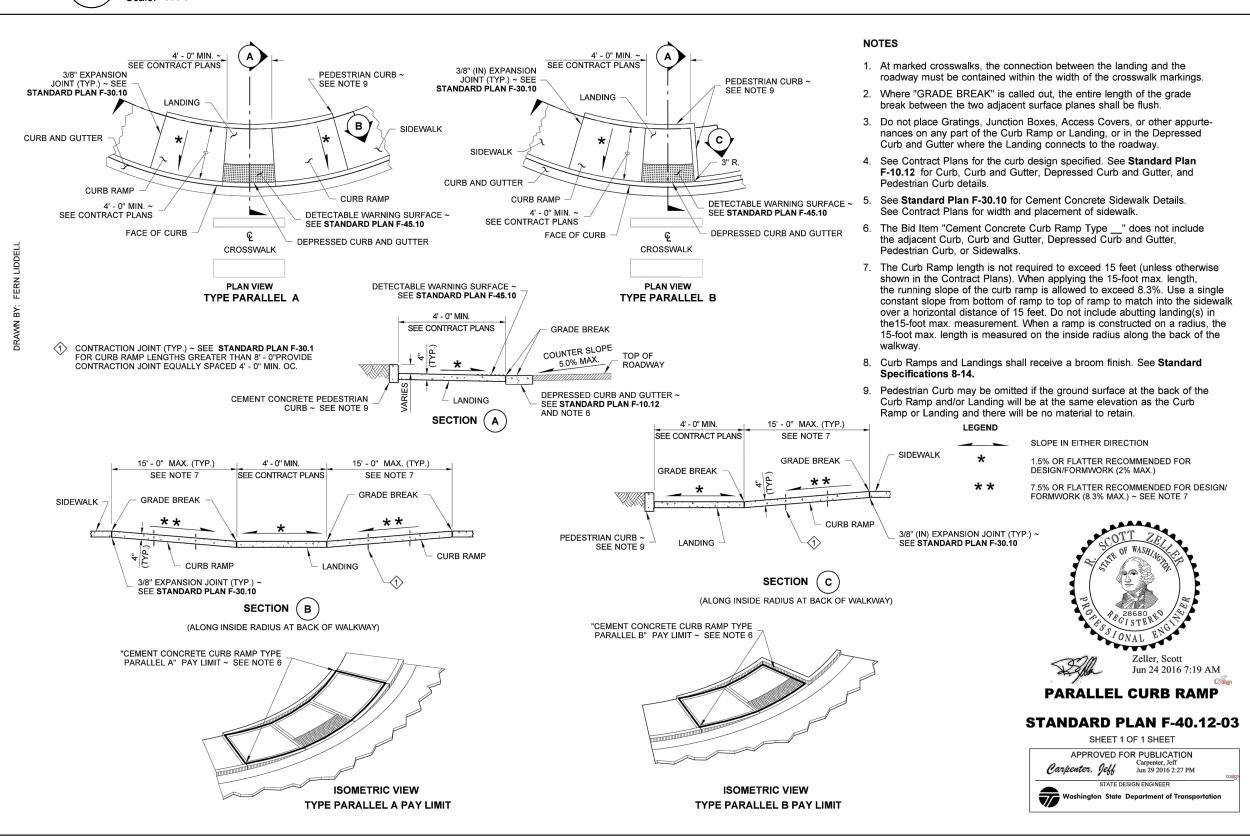
WATER SUPPLY PIPING **COWLITZ MEADOWS** TOLEDO, WA **ENGINEERING SET** Project Manager ES
Drawn by CKJ
Checked by TS Issue Date: 2022-10-x

SITE DETAILS - 3

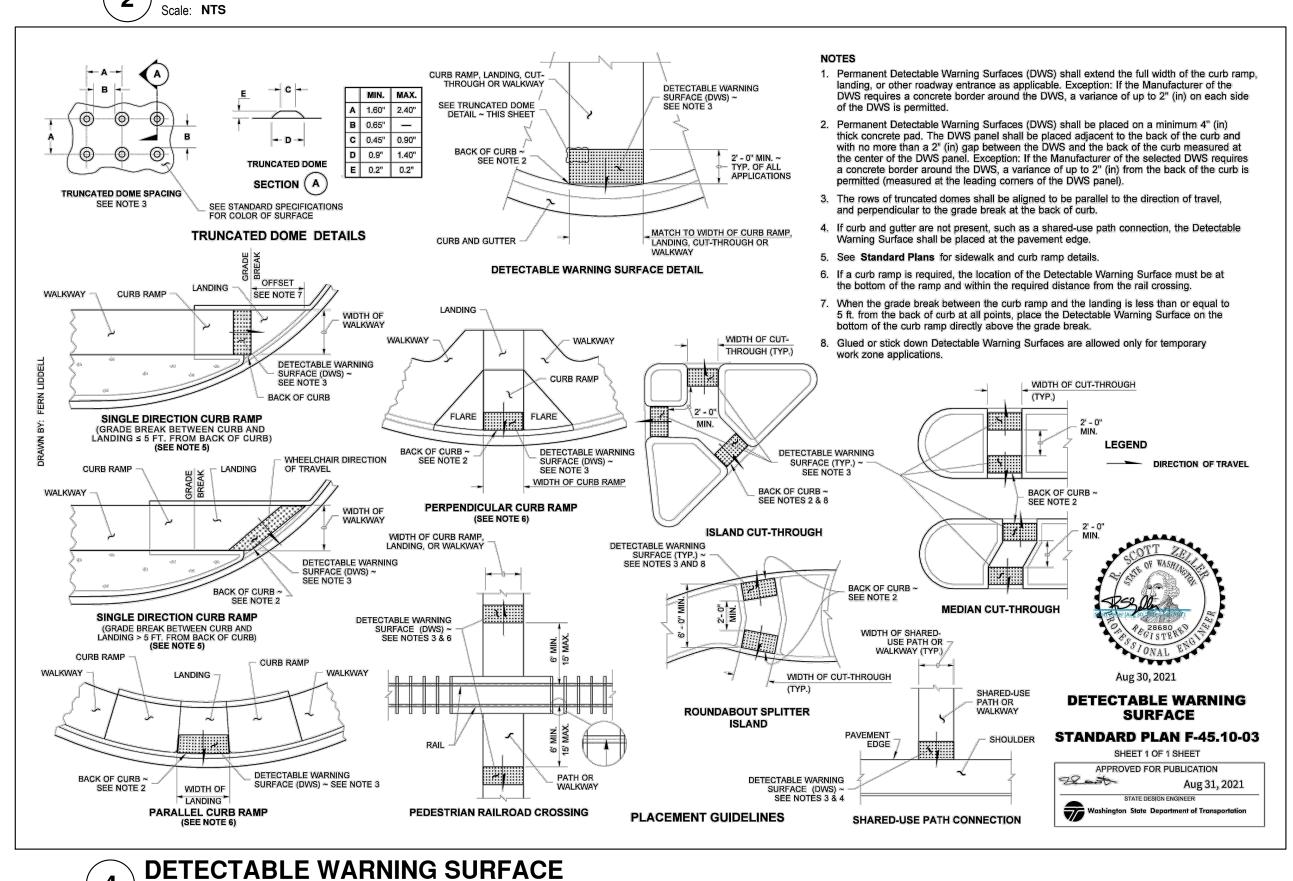






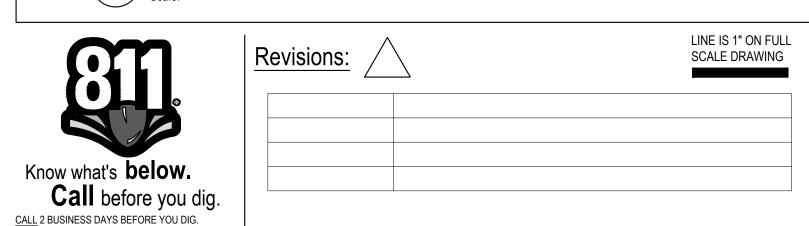






PERPENDICULAR CURB RAMP Scale: NTS

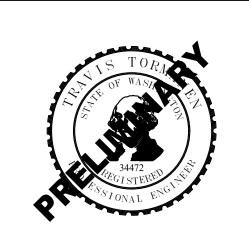
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.



WINDSOR ENGINEERS



Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC



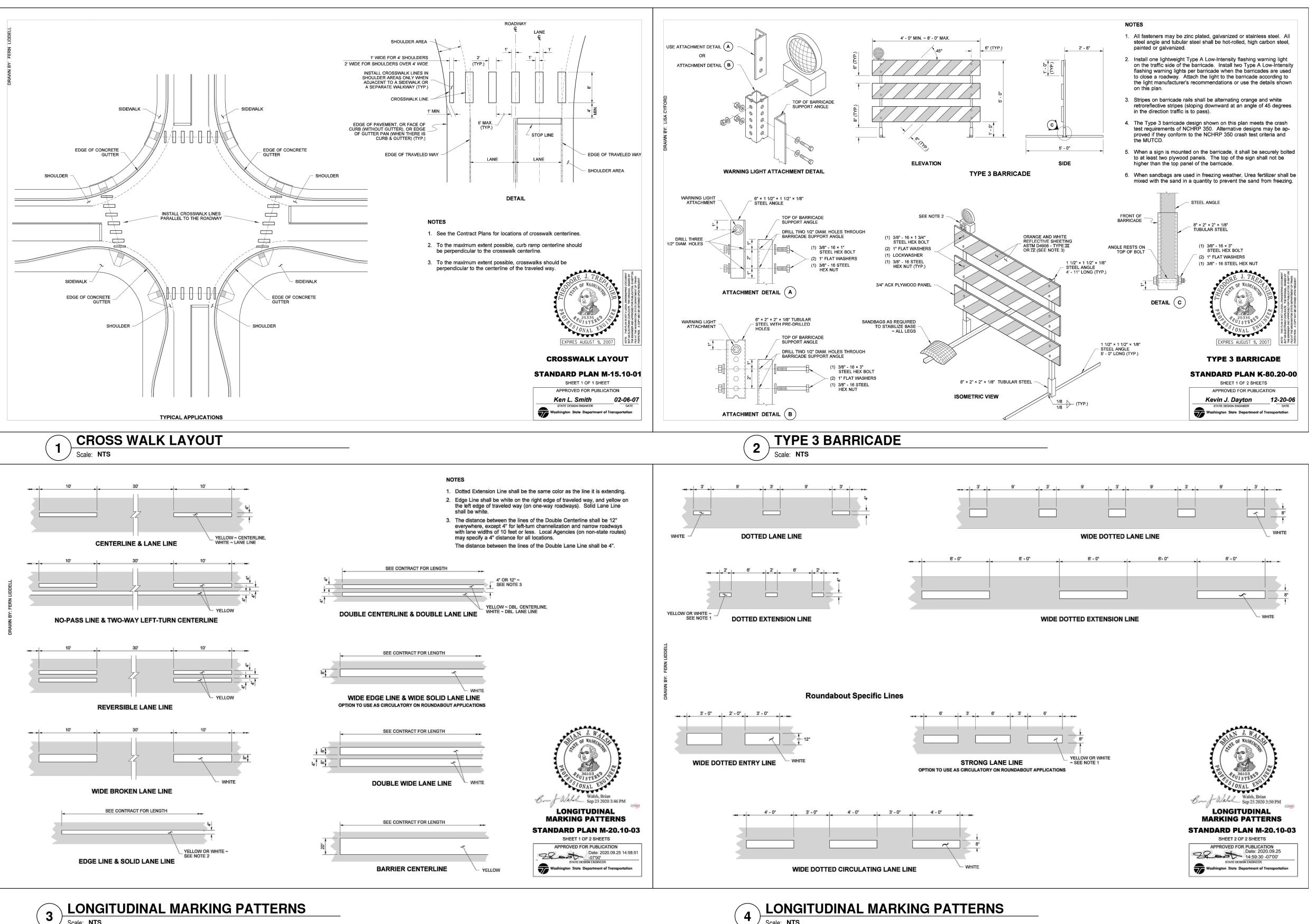
Scale: NTS

Issue Date: 2022-10-x

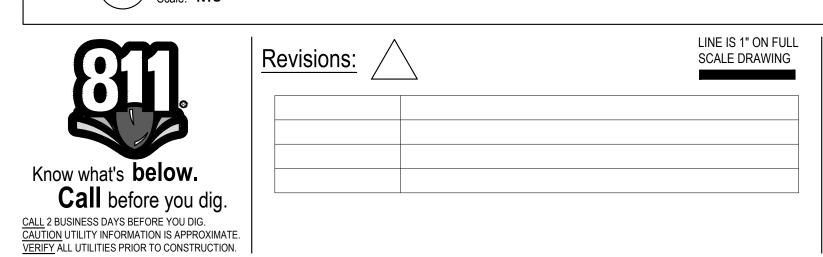
COWLITZ MEADOWS TOLEDO, WA **ENGINEERING SET** Project Manager ___ES_ Drawn by <u>CKJ</u>

ROADWAY DETAILS

Checked by



Scale: NTS





Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC

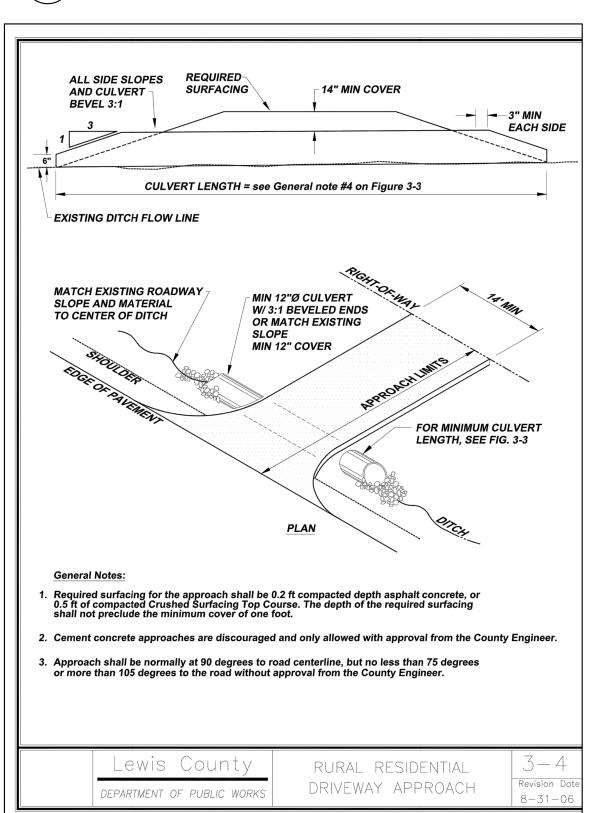
All Rights Reserved.

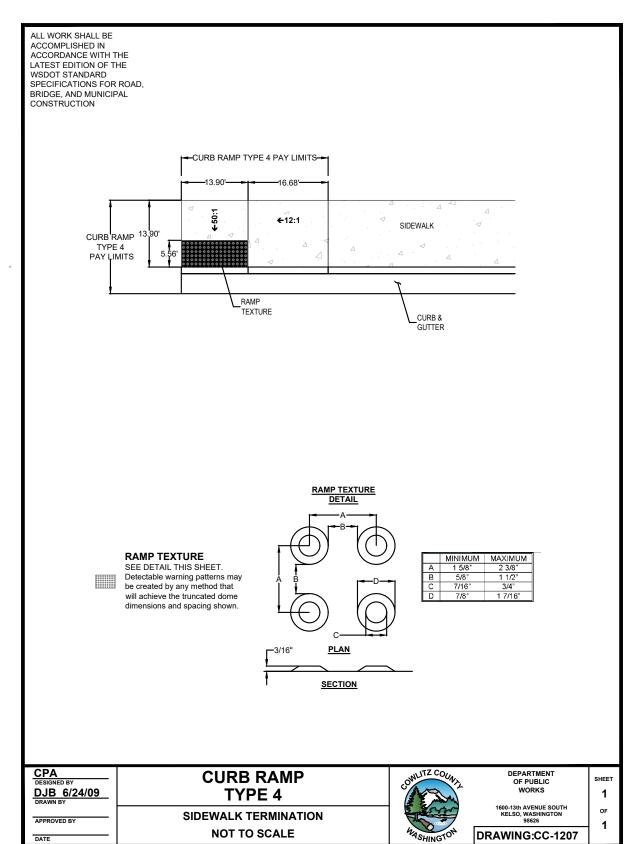


COWLITZ MEADOWS TOLEDO, WA

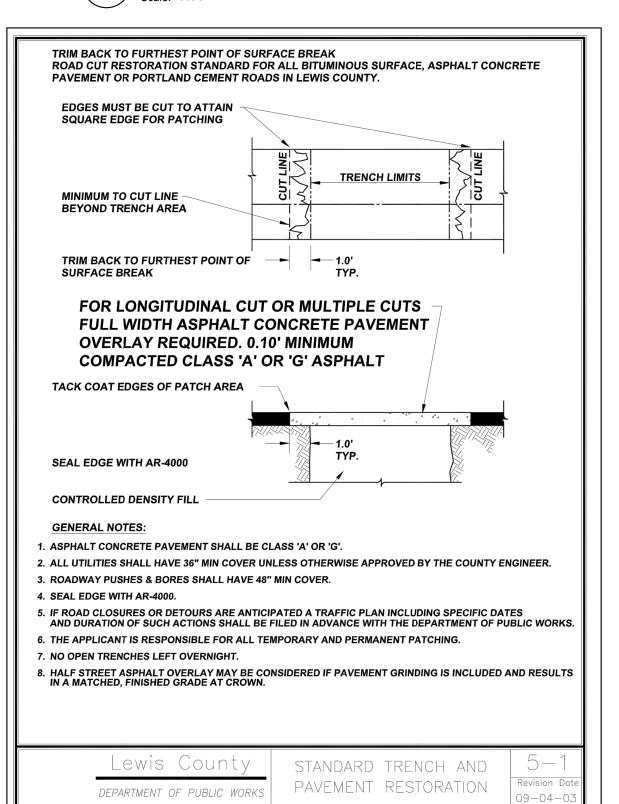
ENGINEERING SET Issue Date: 2022-10-x **ROADWAY DETAILS**

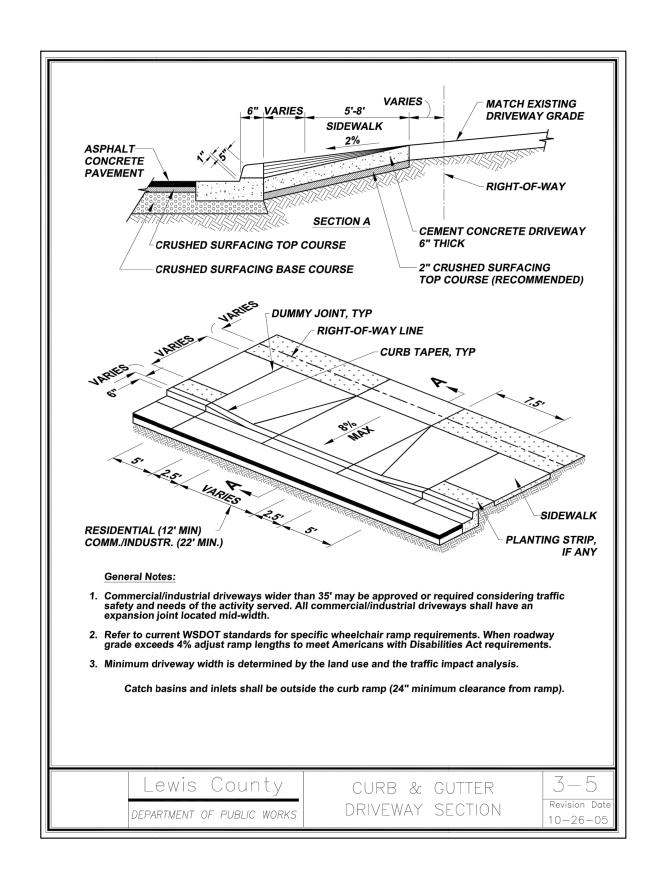


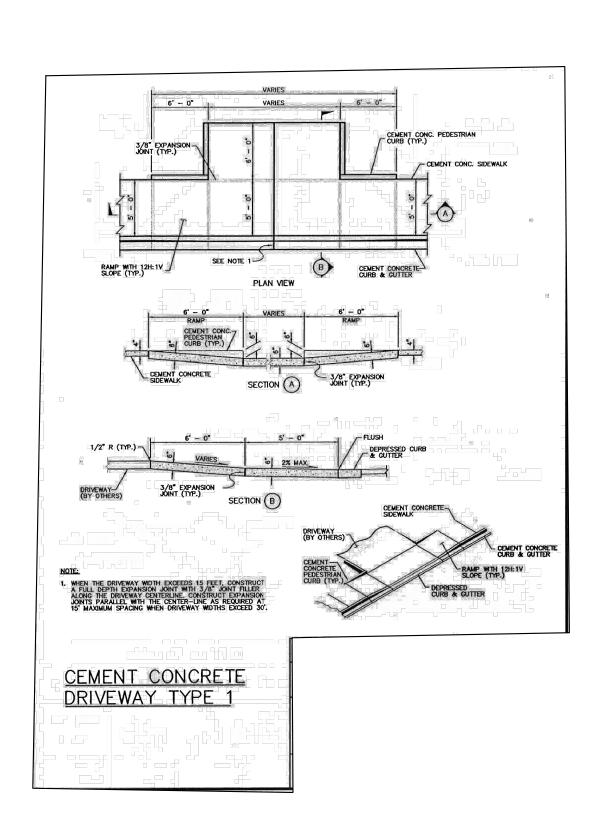


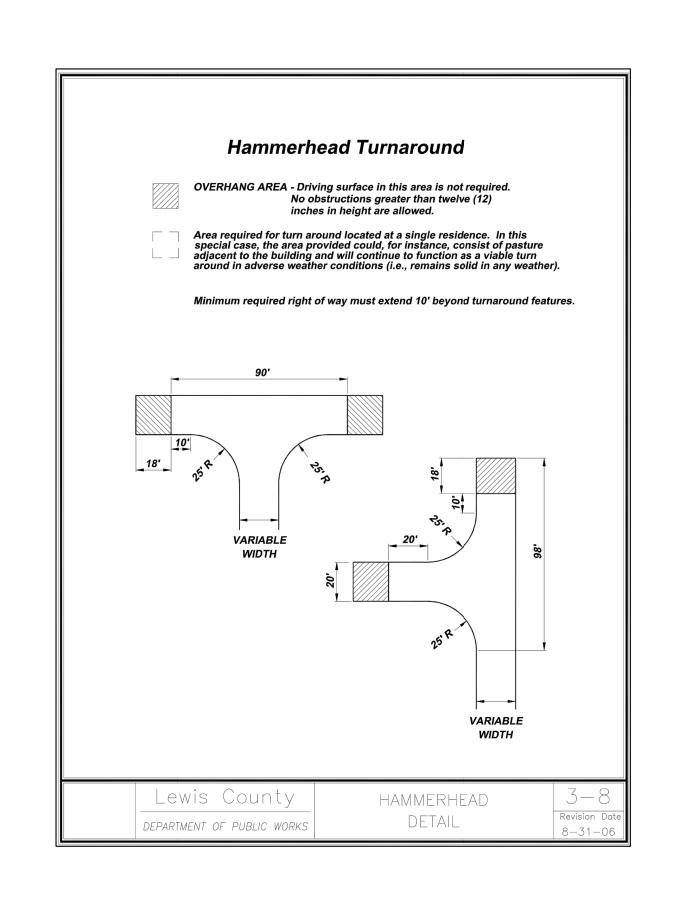


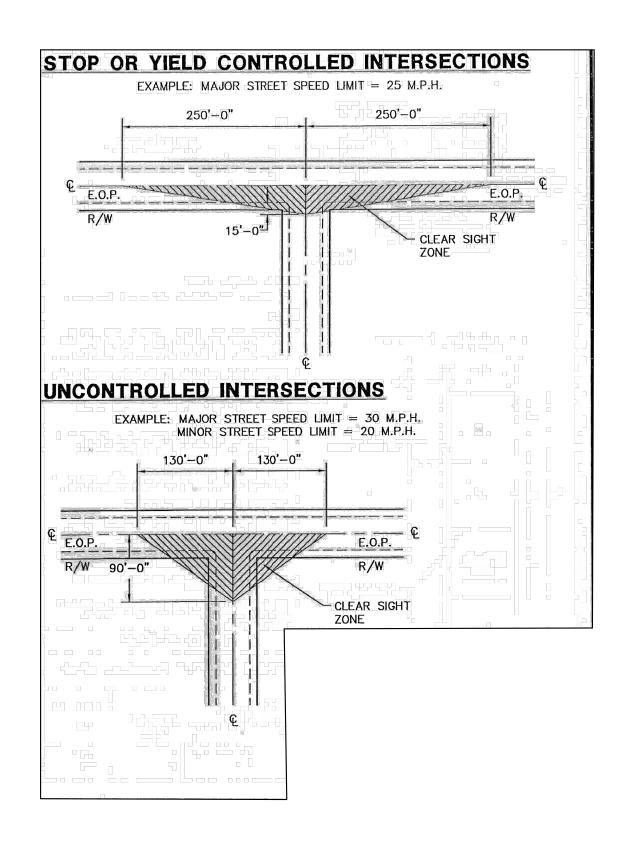
Scale: NTS

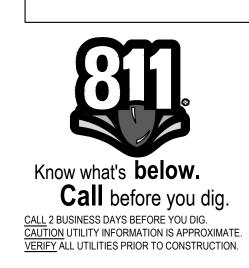


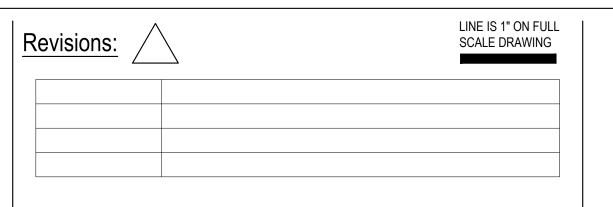












WINDSOR ENGINEERS

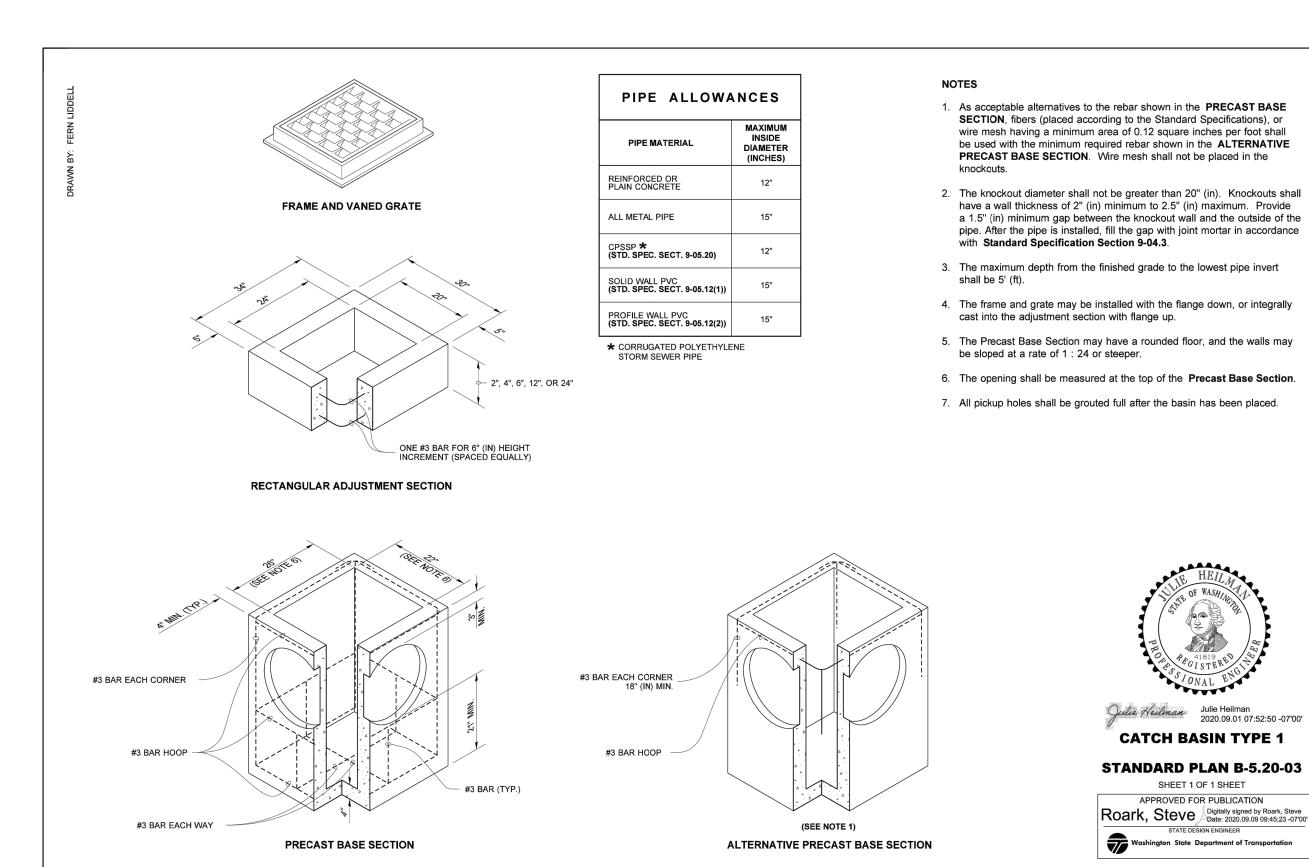


Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217



COWLITZ MEADOWS TOLEDO, WA

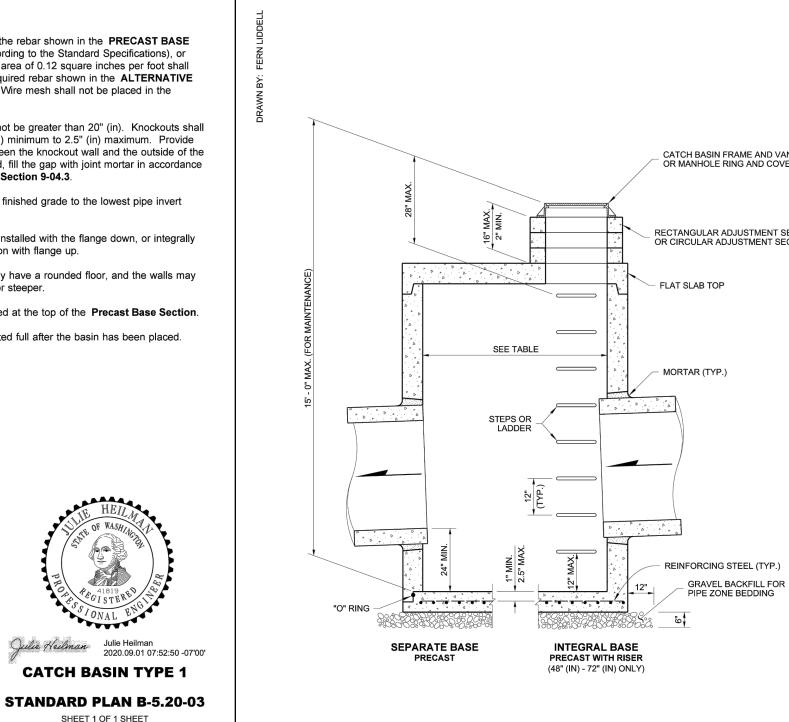
ENGINEERING SET Issue Date: 2022-10-x **ROADWAY DETAILS**



48", 54", OR 60"

STEPS OR LADDER

SEPARATE BASE



CATCH BASIN TYPE 2

Scale: NTS

Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**. CATCH BASIN FRAME AND VANED GRATE OR MANHOLE RING AND COVER CATCH BASIN DIMENSIONS BASIN WALL BASE KNOCKOUT DISTANCE RECTANGULAR ADJUSTMENT SECTION DIAMETER THICKNESS THICKNESS SIZE BETWEEN 48" 6" 8" 54" 4.5" 8" 42" 8" 8" 48" 8" 72" 6" 8" 60" 12" 12" 72" 12" 8" 12" 12" 84" 120" 10" 12" 96" 12" 144" 12" 12" 108" 12"

NOTES

1. No steps are required when height is 4' or less.

The frame may be cast into the adjustment section.

2. The bottom of the precast catch basin may be sloped to facilitate cleaning.

3. The rectangular frame and grate may be installed with the flange up or down.

4. Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum.

PIPE ALLOWANCES							
CATCH BASIN	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER CONCRETE ALL CPSSP 1 SOLID PROFILE METAL PP 4 WALL WALL						
DIAMETER		WEIAL	FF 🕀	PVC ²	PVC 3		
48"	24"	30"	24"	30"	30"		
54"	30"	36"	30"	36"	36"		
60"	36"	42"	36"	42"	42"		
72"	42"	54"	42"	48"	48"		
84"	54"	60"	54"	48"	48"		
96"	60"	72"	60"	48"	48"		
120"	66"	84"	60"	48"	48"		
144"	78"	96"	60"	48"	48"		

① Corrugated Polyethylene Storm Sewer Pipe (See Standard Specification Section 9-05.20) ② (See Standard Specification Section 9-05.12(1))

4 Polypropylene Pipe (See Standard Specification Section 9-05.24)

2. All grates shall be 20" (in) x 24" (in).

ADA requirements.

③ (See Standard Specification Section 9-05.12(2))

Gulie Hellman, June Feb 20 2018 12:49 PM

STANDARD PLAN B-10.20-02

CATCH BASIN TYPE 2

SHEET 1 OF 1 SHEET APPROVED FOR PUBLICATION Carpenter, Jeff Mar 2 2018 10:01 AM Maple STATE DESIGN ENGINEER

Washington State Department of Transportation

CATCH BASIN TYPE 1 Scale: NTS

GRAVEL BACKFILL FOR _ PIPE ZONE BEDDING

MANHOLE TYPE 1



CIRCULAR ADJUSTMENT SECTION (TYP.)

- ECCENTRIC CONE SECTION

PRECAST RISER SECTIONS

- CHANNEL AND SHELF

REINFORCING STEEL (TYP.)

1. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. 2. For pipe allowances, see Standard Plan B-10.20.

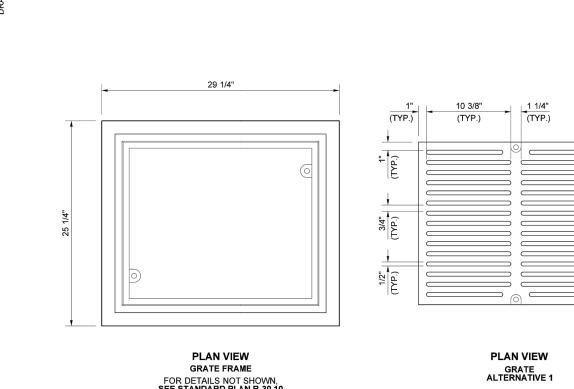
SHEET 1 OF 1 SHEET

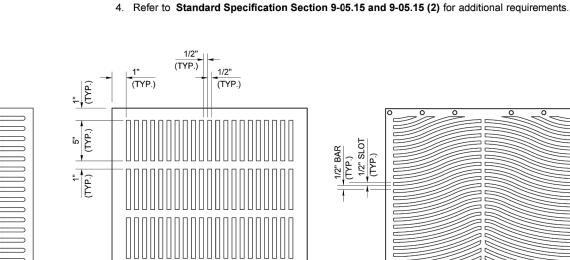
APPROVED FOR PUBLICATION

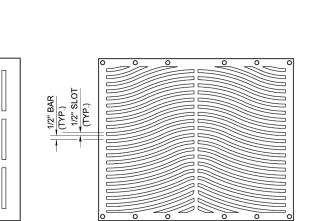
Roark, Steve Digitally signed by Roark, Steve Date: 2020.09.09 09:45:23 -07'00'

Washington State Department of Transportation

MANHOLE DIMENSION TABLE					
DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	
48"	4"	6"	36"	8"	
54"	4.5"	8"	42"	8"	
60"	5"	8"	48"	8"	







PLAN VIEW

1. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract.

3. Grate alternatives shown for informational purposes. Grate design varies by manufacturer and must meet

mechanism. Location of bolt-down holes varies by manufacturer.

Provide 2 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the

304 Stainless Steel (S.S.) 5/8" (in) - 11 NC × 2" (in) Allen head cap screw by being tapped, or other approved

FOR DETAILS NOT SHOWN, SEE STANDARD PLAN B-30.10

ISOMETRIC VIEWS

(GRATE ALTERNATIVE 1 SHOWN)

PLAN VIEW GRATE ALTERNATIVE 2

GRATE ALTERNATIVE 3

Julie Heilman, Julie Feb 20 2018 12:53 PM ADA GRATES FOR RECTANGULAR FRAMES

STANDARD PLAN B-30.15-00 SHEET 1 OF 1 SHEET APPROVED FOR PUBLICATION Carpenter, Jeff Feb 27 2018 7:56 AM

STATE DESIGN ENGINEER

Washington State Department of Transportation

MANHOLE TYPE 1 STANDARD PLAN B-15.20-01

> SHEET 1 OF 1 SHEET APPROVED FOR PUBLICATION Pasco Bakotich III 02-07-12 Washington State Department of Transportation

ADA GRATES FOR RECTANGULAR FRAMES Scale: NTS

Know what's **below.** Call before you dig. CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

LINE IS 1" ON FULL Revisions: SCALE DRAWING

INTEGRAL BASE PRECAST WITH RISER

WINDSOR ENGINEERS



Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217



COWLITZ MEADOWS

TOLEDO, WA

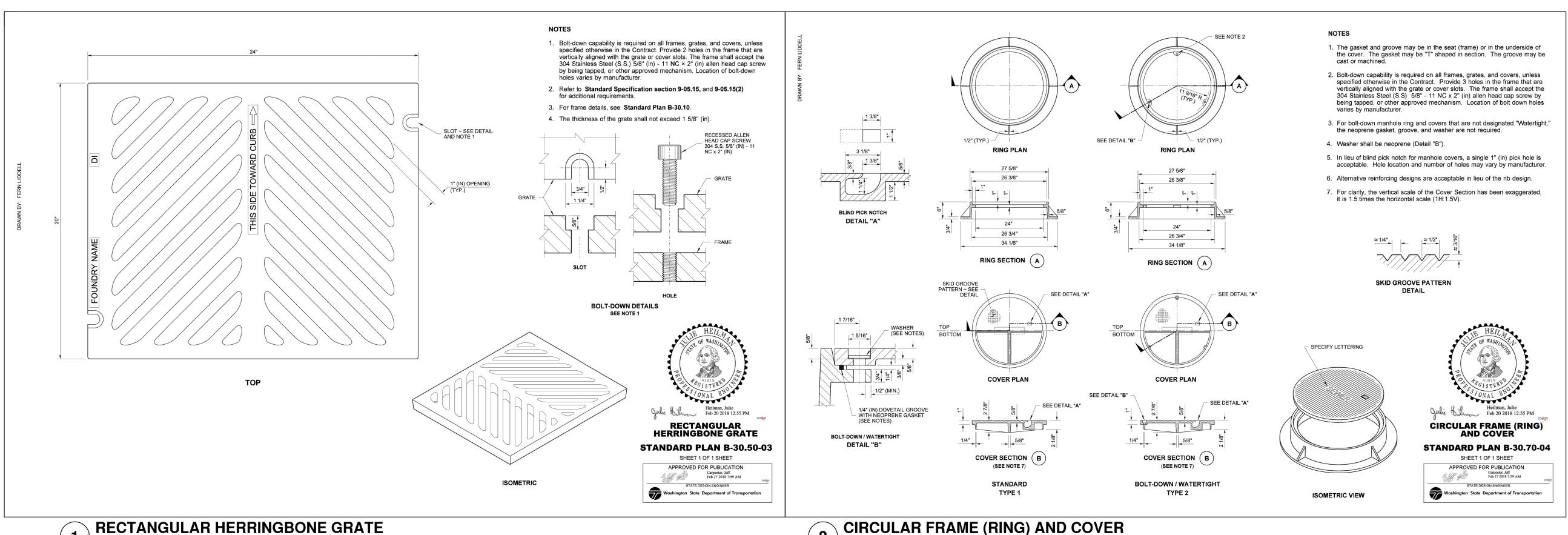
ENGINEERING SET

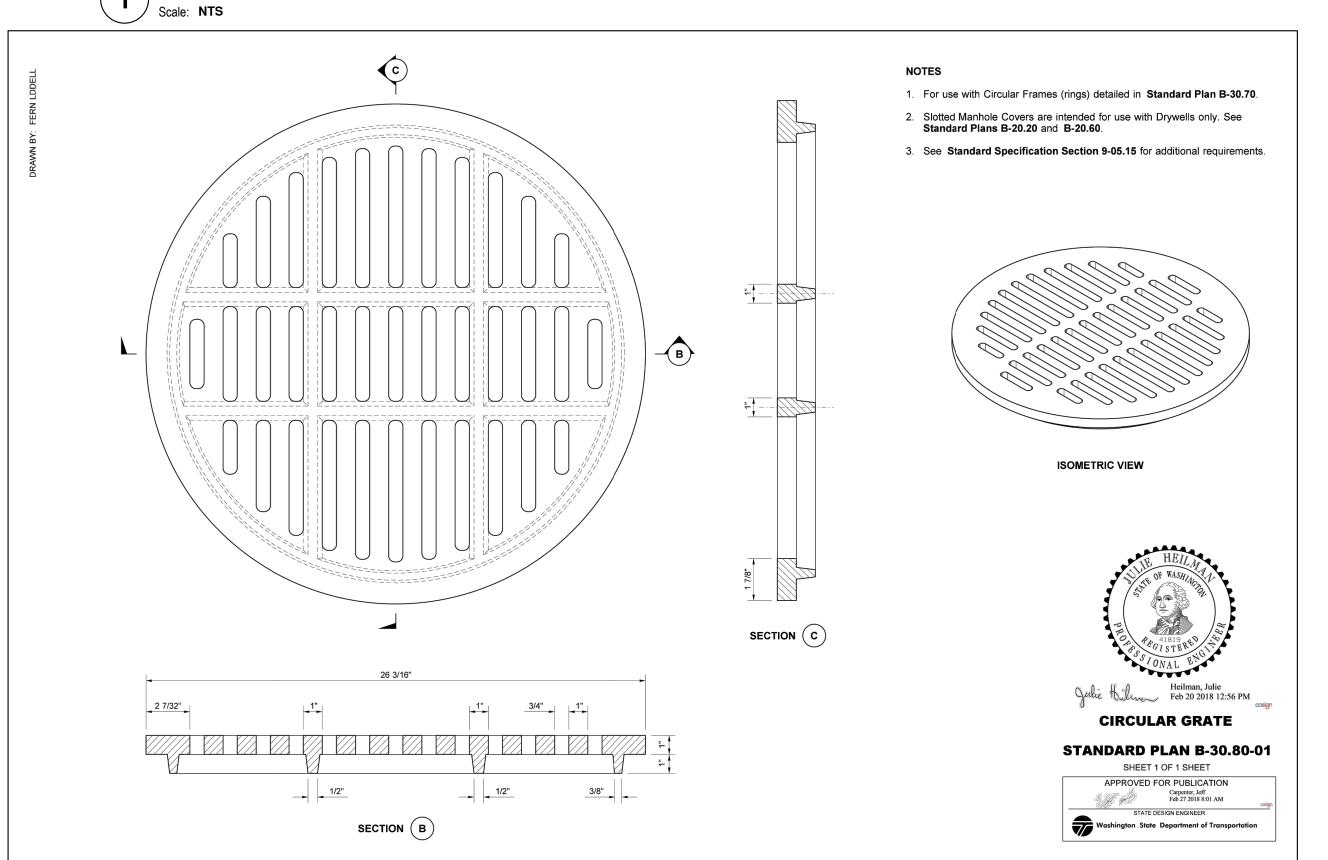
Issue Date: 2022-10-x

Project Manager ES
Drawn by CKJ
Checked by TS

STORM WATER DETAILS

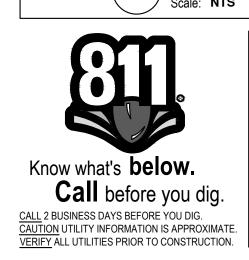
C390







ADA GRATES FOR RECTANGULAR FRAMES



CIRCULAR GRATE

LINE IS 1" ON FULL SCALE DRAWING Revisions:

WINDSOR ENGINEERS

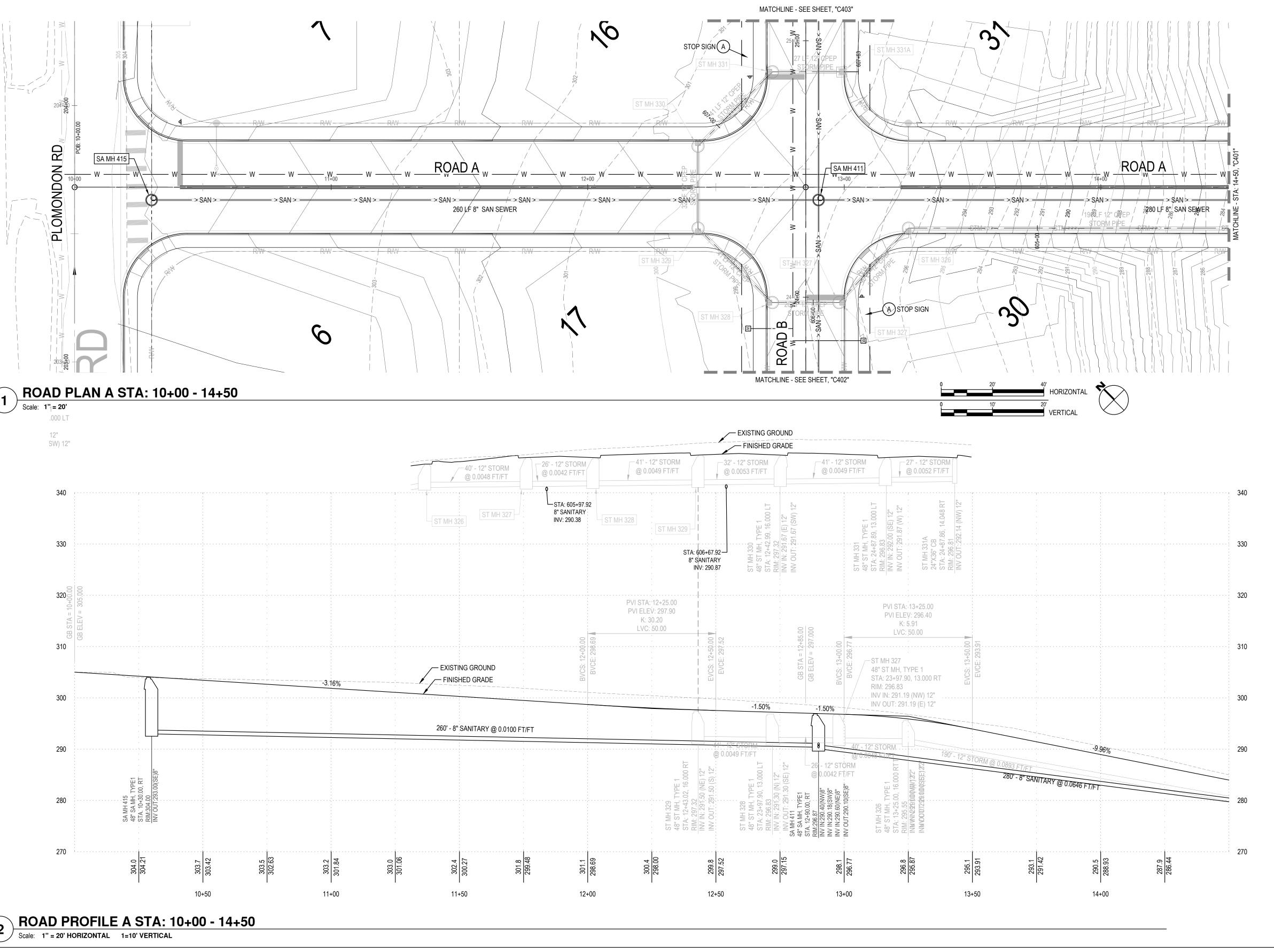


Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.



COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x **STORM WATER DETAILS**



SANITARY 400

- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE.
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

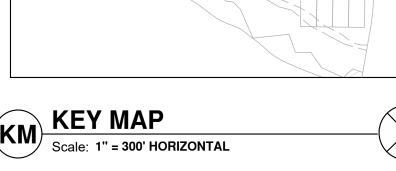
WATER 500

- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING: (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS (1) FIRE HYDRANT WITH THRUST BLOCK RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING: (1) CAP WITH RESTRAINT & THRUST BLOCK (1) BLOW OFF RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 506 INSTALL WATER ASSEMBLY. CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR. COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION. (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G. (1) 8" SLEEVE COUPLING
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.
- 508 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

DRY UTILITIES 600

600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10' EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH UTILITY PROVIDER

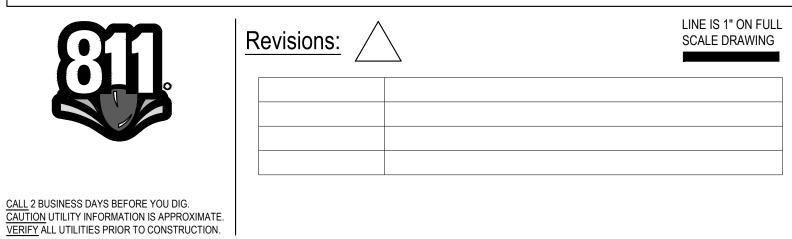




A - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE STA: 10+00 - 14+50

C400

Project Manager ES
Drawn by CKJ
Checked by TS



WINDSOR ENGINEERS

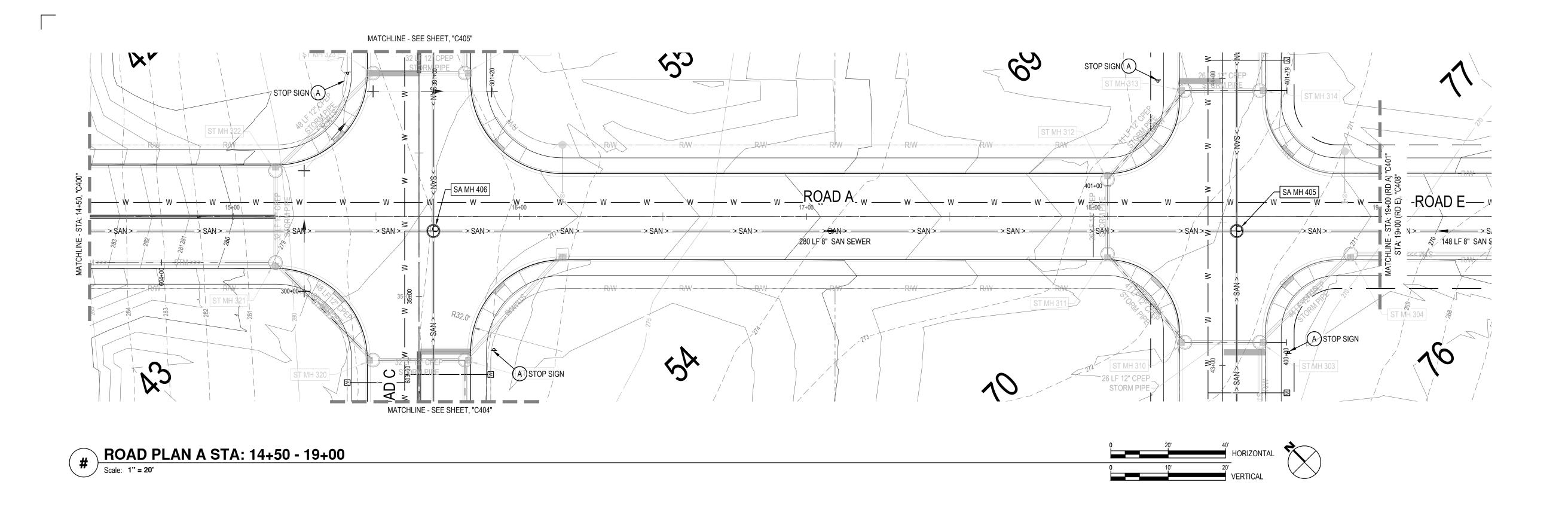


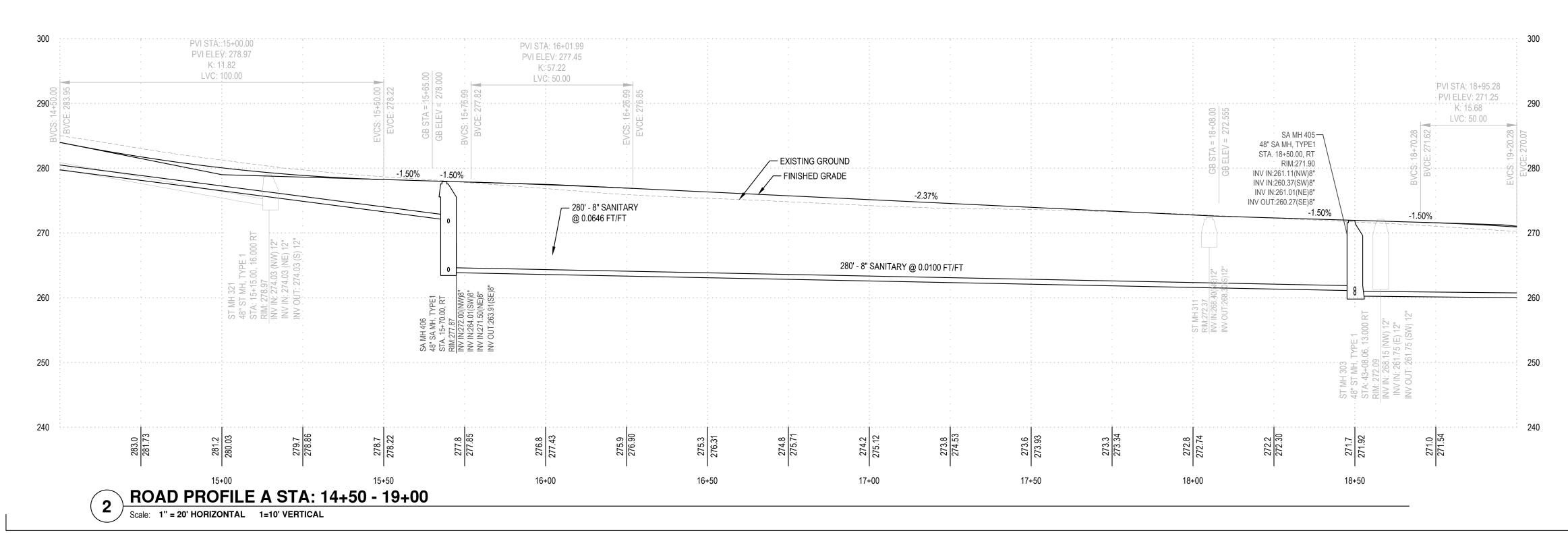


ENGINEERING SET Issue Date: 2022-10-x

COWLITZ MEADOWS

TOLEDO, WA







SANITARY 400

- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE.
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

WATER 500

- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING:
 (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK
 (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS
 (1) FIRE HYDRANT WITH THRUST BLOCK
 RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING:
 (1) CAP WITH RESTRAINT & THRUST BLOCK
 (1) BLOW OFF
 RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR. COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION.

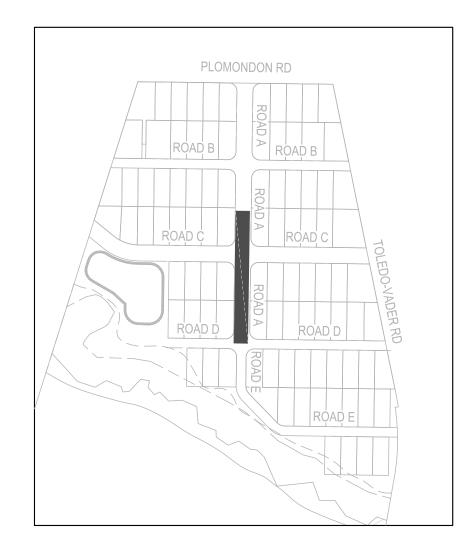
 (1) 8" X 8" FLG TEE WITH THRUST BLOCK

 (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G.

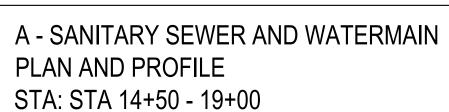
 (1) 8" SLEEVE COUPLING
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.
- 508 INSTALL WATER ASSEMBLY INCLUDING:
 (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS
 WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

DRY UTILITIES 600

600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10' EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH UTILITY PROVIDER

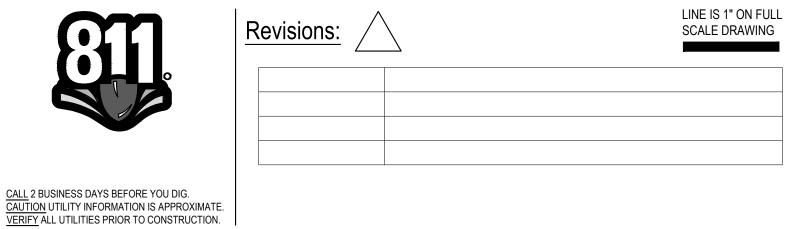






ES CKJ

C401



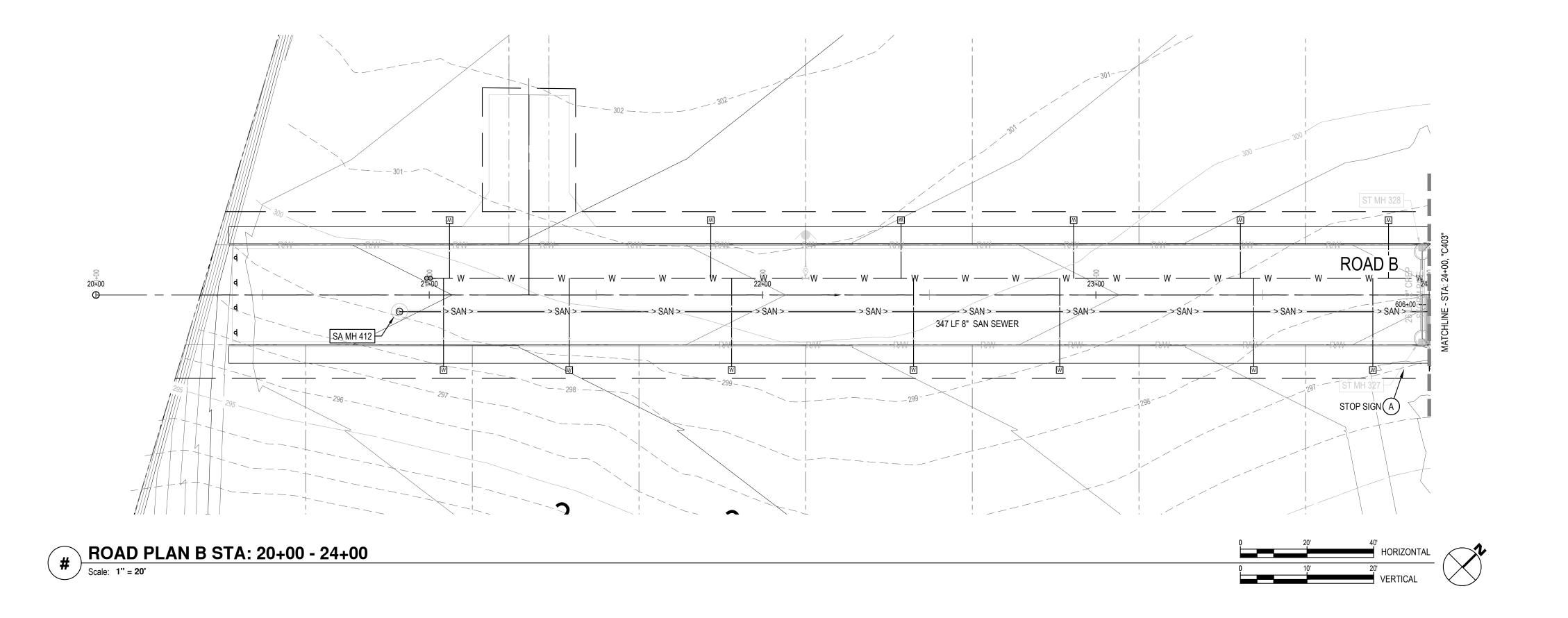
WINDSOR ENGINEERS

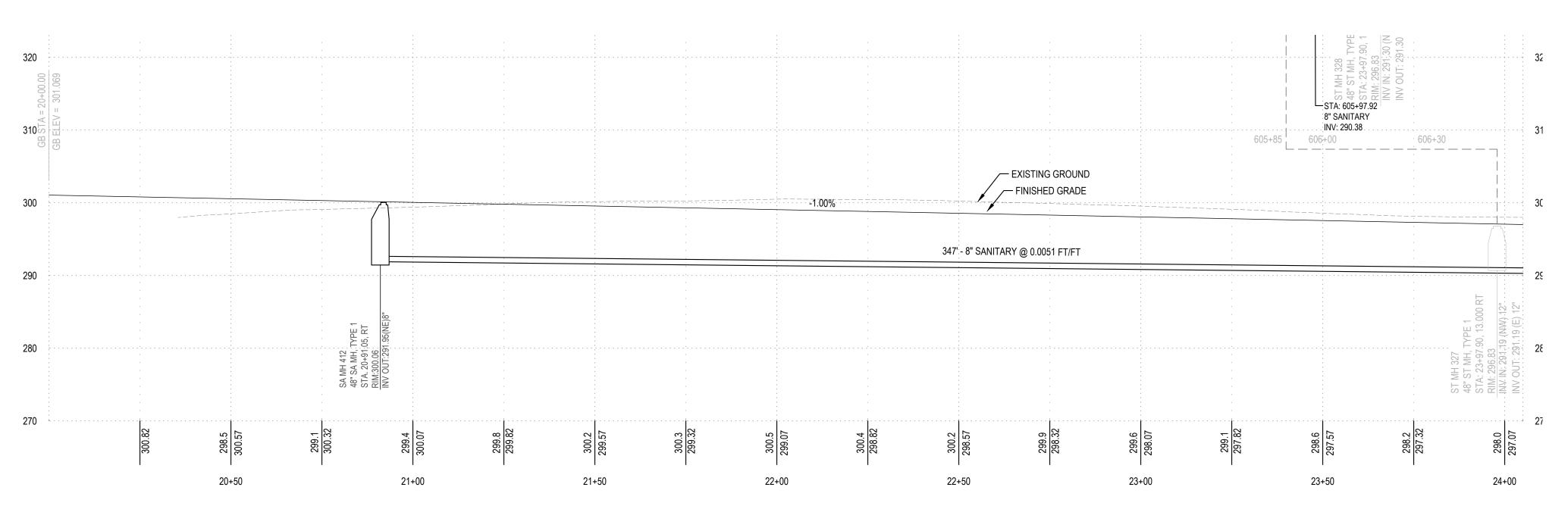




TOLEDO, WA

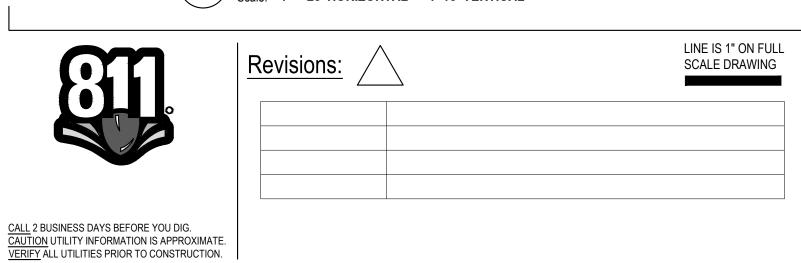
ENGINEERING SETIssue Date: 2022-10-x











WINDSOR ENGINEERS



Vancouver, WA Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC



COWLITZ MEADOWS

ENGINEERING SET Issue Date: 2022-10-x

TOLEDO, WA

Project Manager ES Drawn by CKJ Checked by TS

B - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE STA: 20+00 - 24+00

C402

KEY MAP

Scale: 1" = 300' HOPE

Scale: 1" = 300' HORIZONTAL

SANITARY 400

WATER 500

(1) BLOW OFF

BACKWATER VALVE.

400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL

403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

(1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS (1) FIRE HYDRANT WITH THRUST BLOCK

(1) CAP WITH RESTRAINT & THRUST BLOCK

RESTRAIN JOINTS WITHIN 105' OF END PIPE.

(1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G.

(1) 8" SLEEVE COUPLING

507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.

508 INSTALL WATER ASSEMBLY INCLUDING:

509 INSTALL WATER ASSEMBLY INCLUDING:

(1) WATER SAMPLING STATION PER DETAIL

510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10'

EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH

WITHIN 105' OF END PIPE.

DRY UTILITIES 600

UTILITY PROVIDER

401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER

402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A

500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.

501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING: (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK

RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.

503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING:

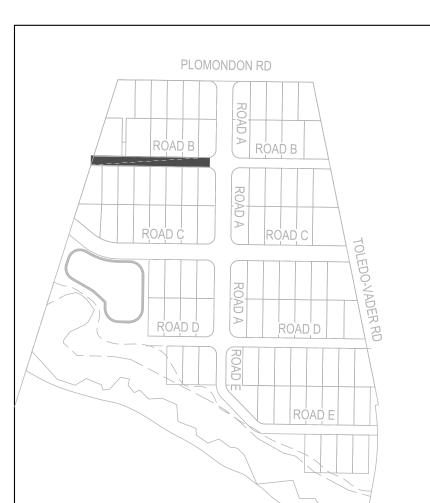
WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION.

502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED

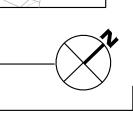
BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER

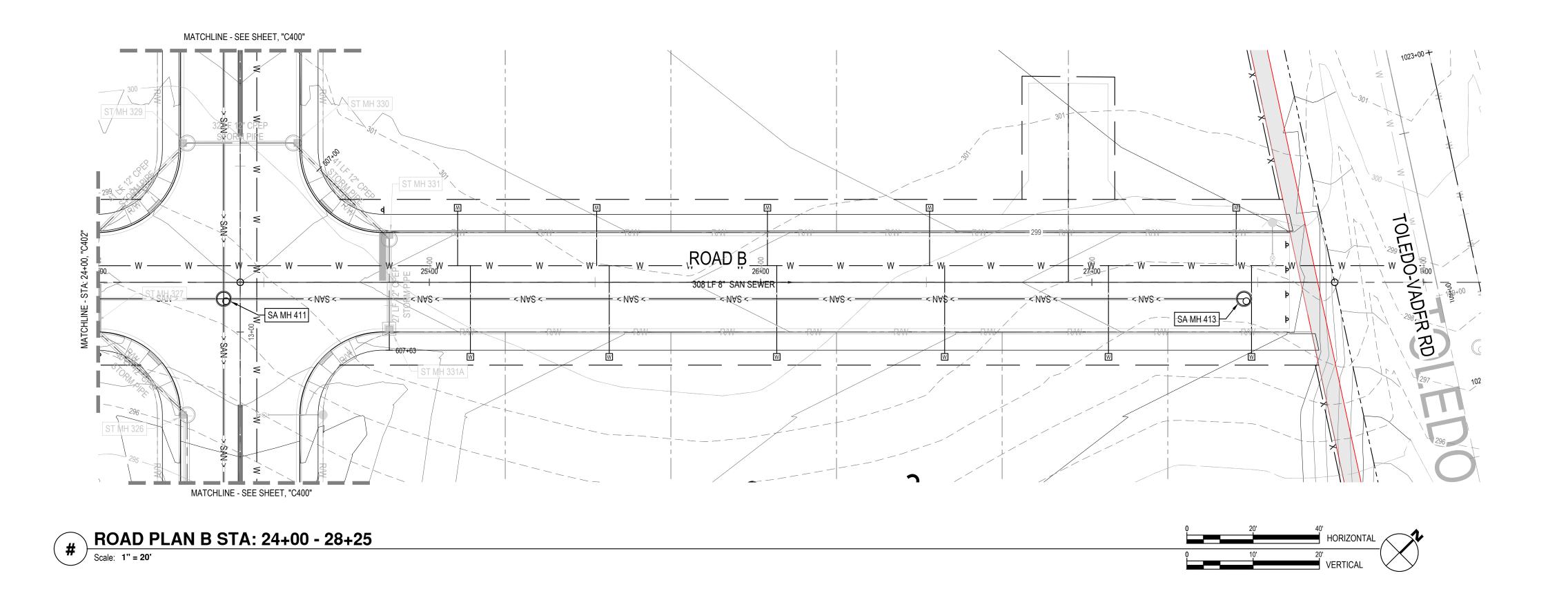
506 INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR. COORDINATE TIE-IN ACTIVITIES

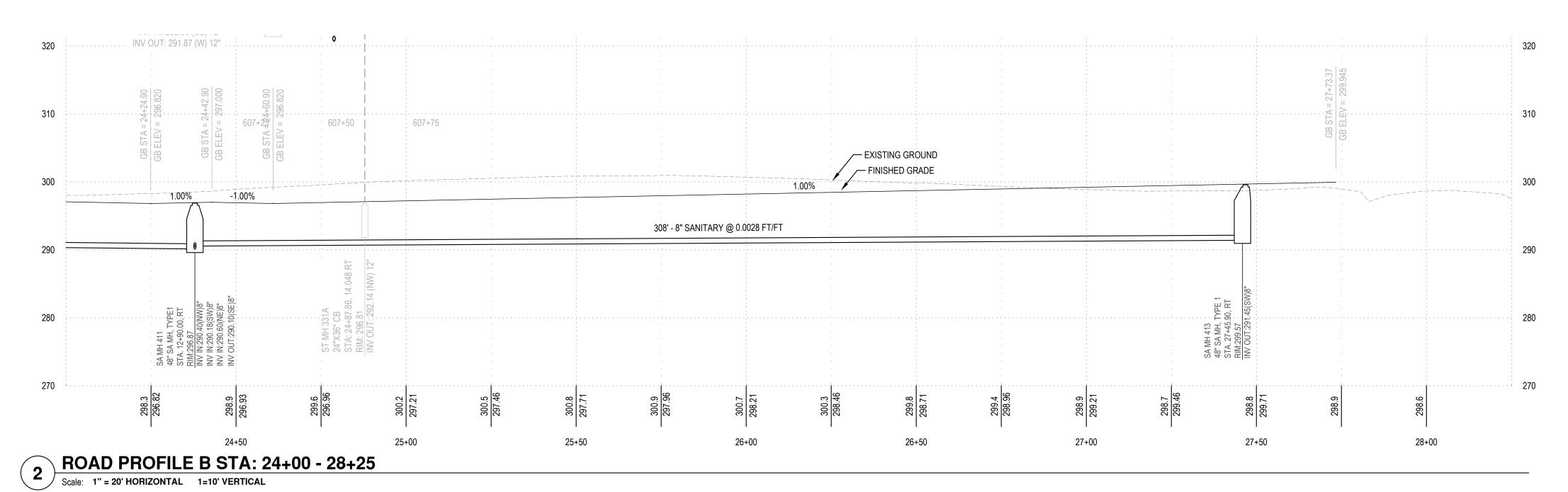
(1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS



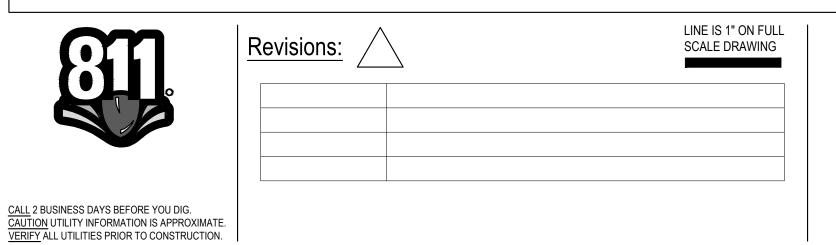












WINDSOR ENGINEERS





COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x

Project Manager ES
Drawn by CKJ
Checked by TS

SANITARY 400

- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

WATER 500

- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING: (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS (1) FIRE HYDRANT WITH THRUST BLOCK RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING: (1) CAP WITH RESTRAINT & THRUST BLOCK (1) BLOW OFF RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 506 INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR. COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION. (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G. (1) 8" SLEEVE COUPLING
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.
- 508 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

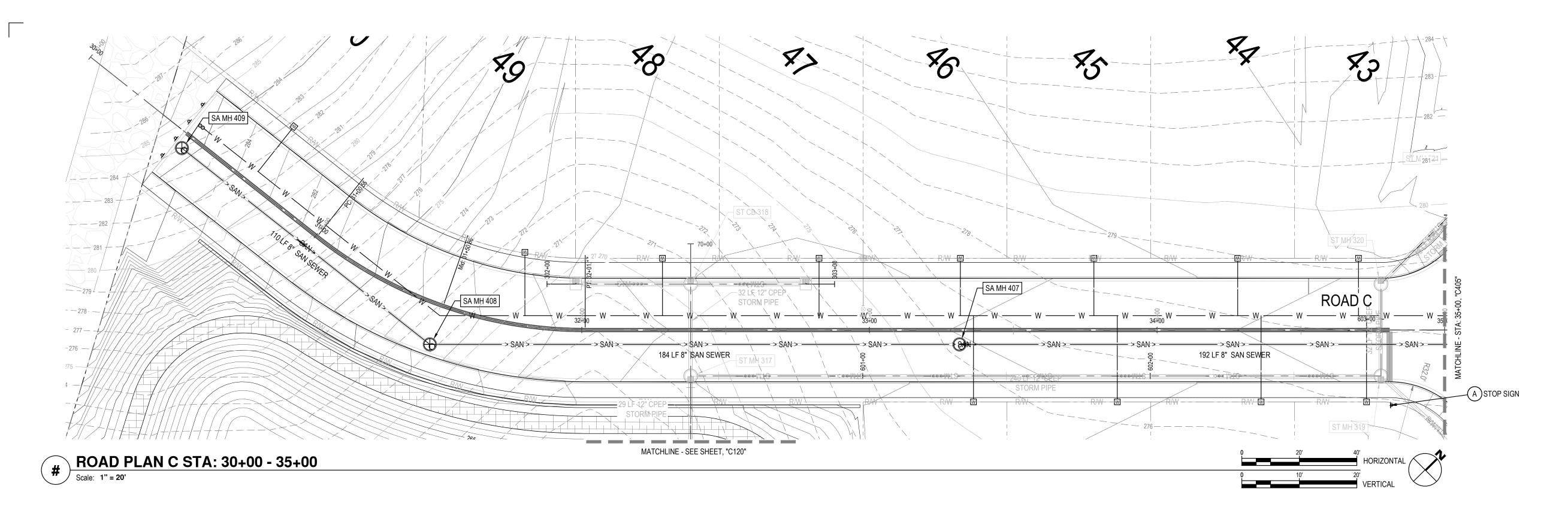
DRY UTILITIES 600

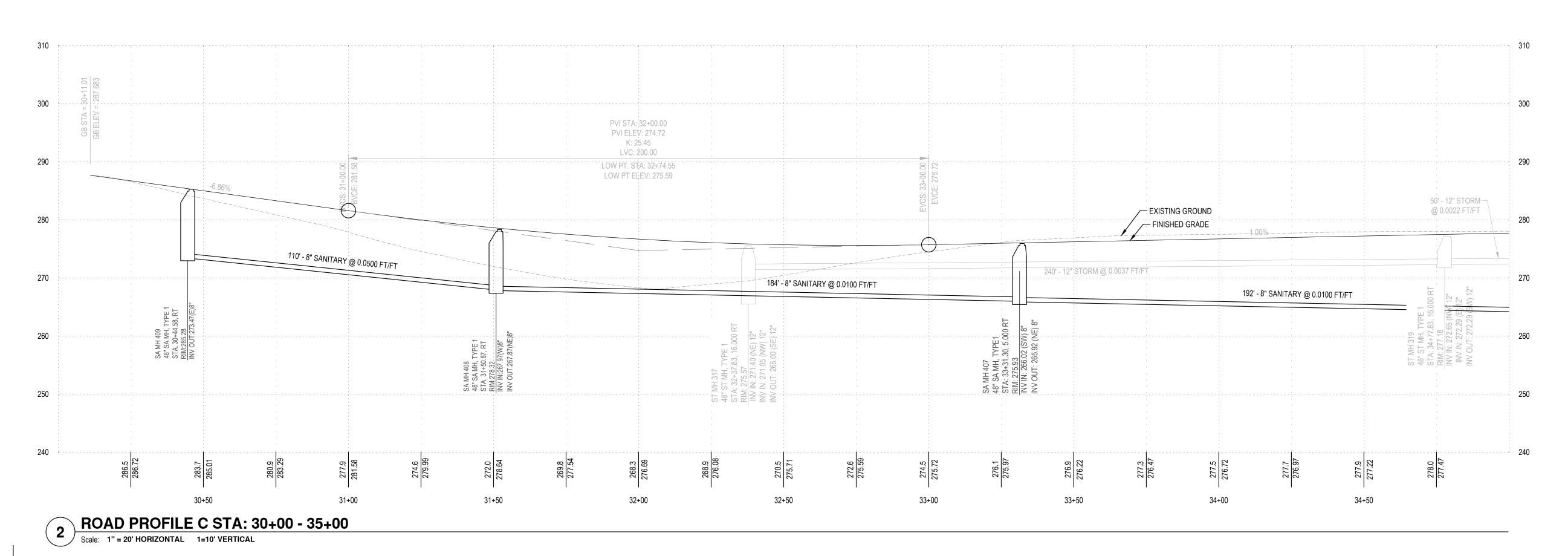
600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10' EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH UTILITY PROVIDER





B - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE STA: 24+00 - 28+25





SANITARY 400

- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE.
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

WATER 500

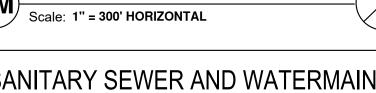
- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING: (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS (1) FIRE HYDRANT WITH THRUST BLOCK RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING: (1) CAP WITH RESTRAINT & THRUST BLOCK (1) BLOW OFF RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 506 INSTALL WATER ASSEMBLY. CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR. COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION. (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G. (1) 8" SLEEVE COUPLING
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.
- 508 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

DRY UTILITIES 600

600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10' EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH UTILITY PROVIDER

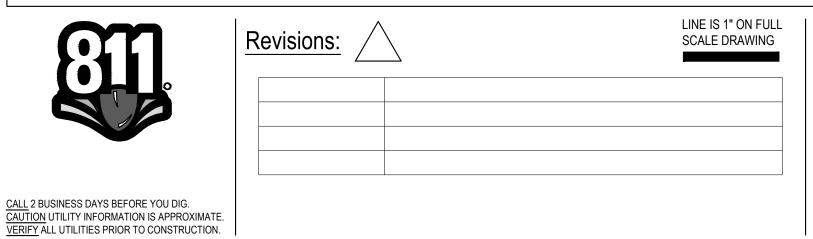






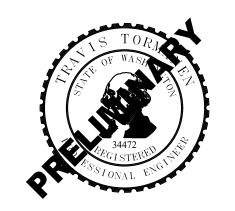
C - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE STA: 30+00 - 35+00

C404



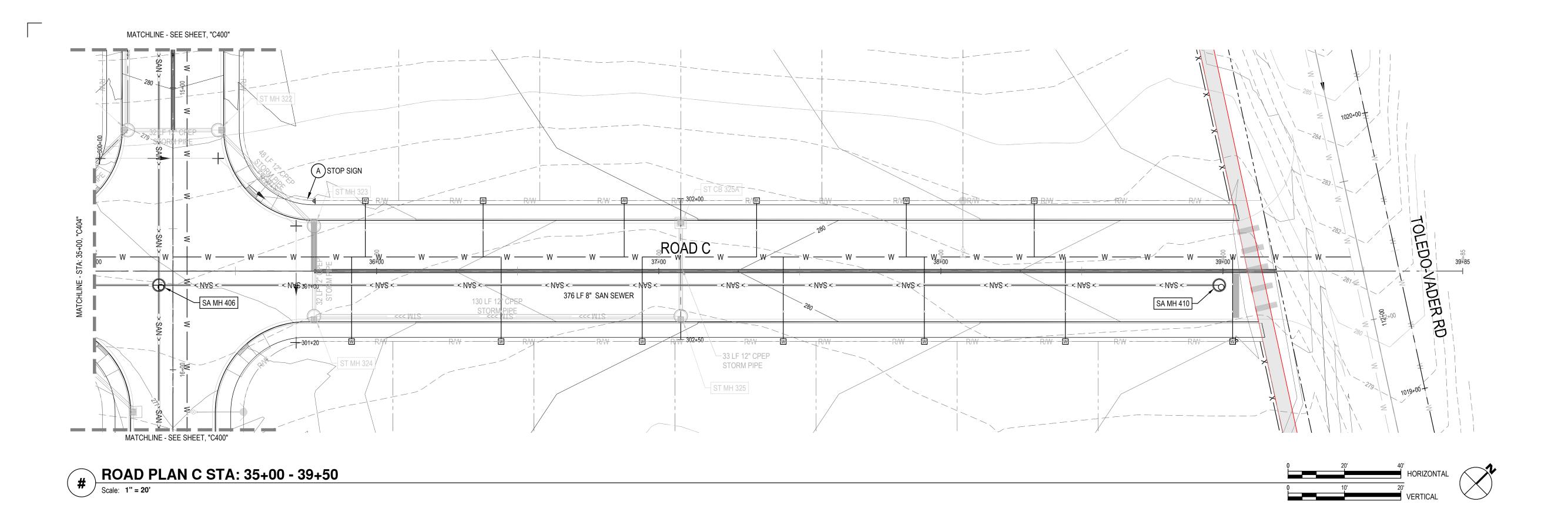
WINDSOR ENGINEERS

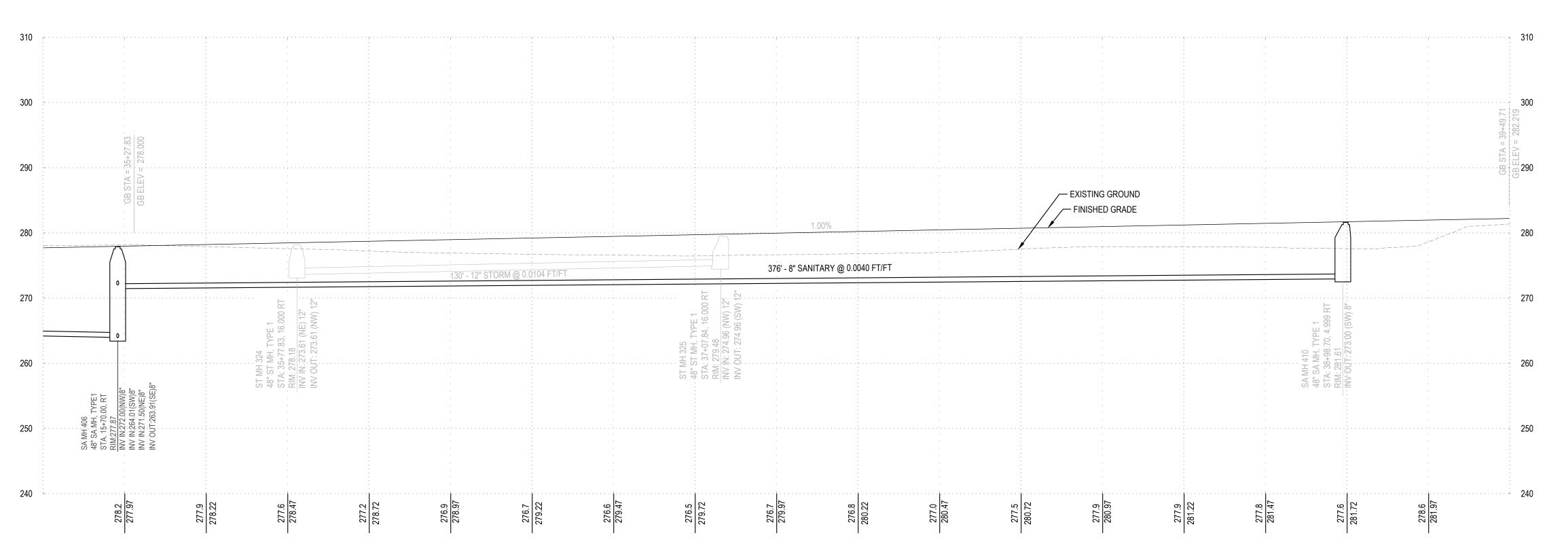




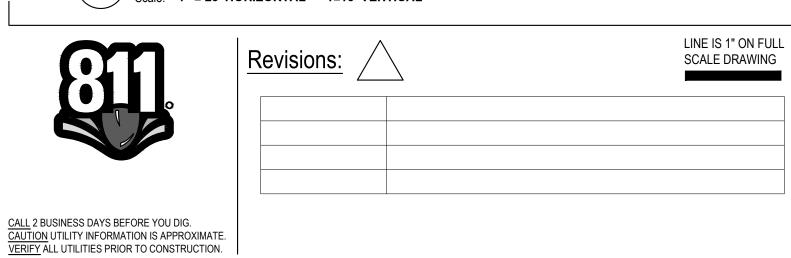
COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x









WINDSOR ENGINEERS





TOLEDO, WA

ENGINEERING SETIssue Date: 2022-10-x

Project Manager <u>ES</u>

Drawn by <u>CKJ</u>

Checked by <u>TS</u>

C - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE STA: 35+00 - 39+50

C405



- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE.
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

WATER 500

- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING:
 (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK
 (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS
 (1) FIRE HYDRANT WITH THRUST BLOCK
 RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING:
 (1) CAP WITH RESTRAINT & THRUST BLOCK
 (1) BLOW OFF
 RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR. COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION.

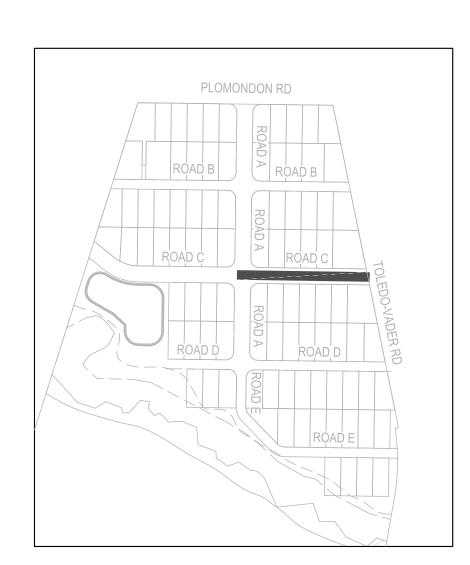
 (1) 8" X 8" FLG TEE WITH THRUST BLOCK

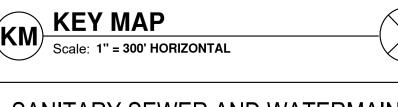
 (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G.

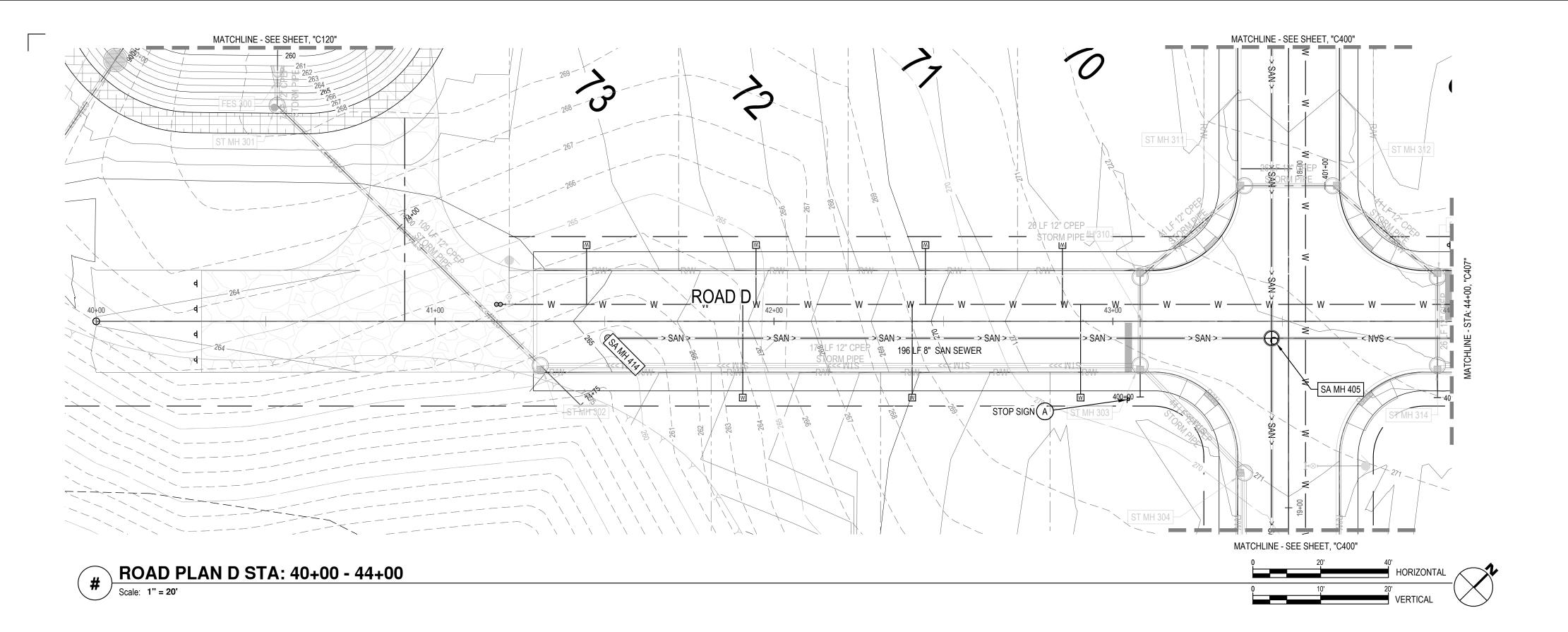
 (1) 8" SLEEVE COUPLING
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.
- 508 INSTALL WATER ASSEMBLY INCLUDING:
 (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS
 WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

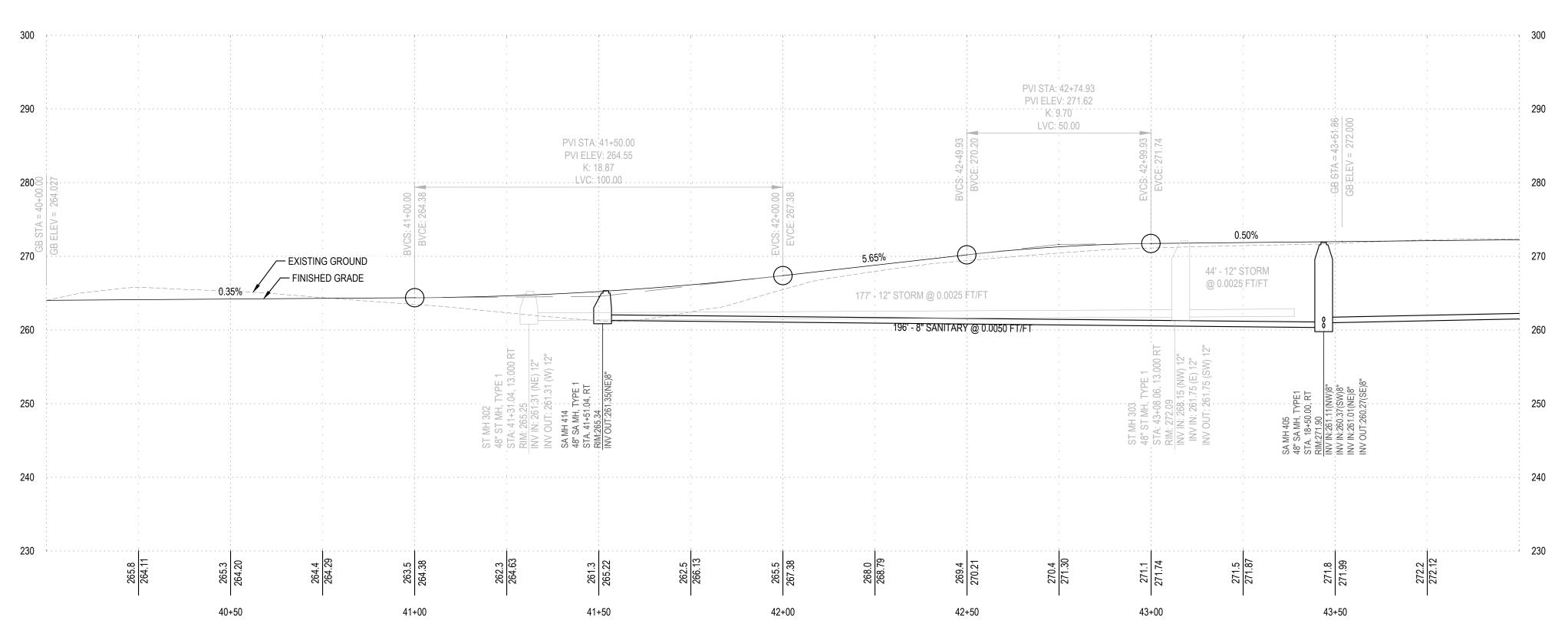
DRY UTILITIES 600

600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10'
EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH
UTILITY PROVIDER

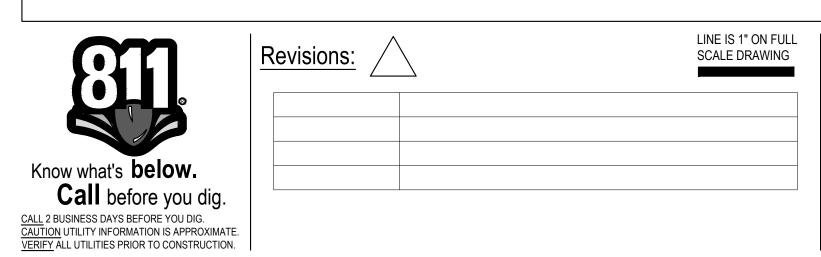








ROAD PROFILE D STA: 40+00 - 44+00 Scale: 1" = 20' HORIZONTAL 1=10' VERTICAL



WINDSOR ENGINEERS





COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x

D - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE

C406

SANITARY 400

WATER 500

BACKWATER VALVE.

400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL

403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER

402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A

500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.

501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING: (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS (1) FIRE HYDRANT WITH THRUST BLOCK

RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.

503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING:

WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION.

(1) CAP WITH RESTRAINT & THRUST BLOCK

RESTRAIN JOINTS WITHIN 105' OF END PIPE.

(1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G.

(3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.

(1) WATER SAMPLING STATION PER DETAIL

510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10'

EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH

PLOMONDON RD

ROAD C ROAD C

(1) 8" SLEEVE COUPLING

507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK

508 INSTALL WATER ASSEMBLY INCLUDING:

509 INSTALL WATER ASSEMBLY INCLUDING:

WITHIN 105' OF END PIPE.

DRY UTILITIES 600

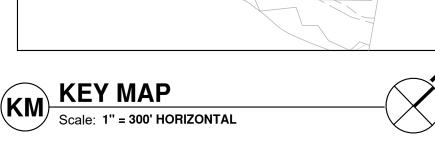
UTILITY PROVIDER

(1) BLOW OFF

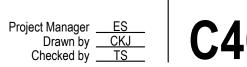
502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER

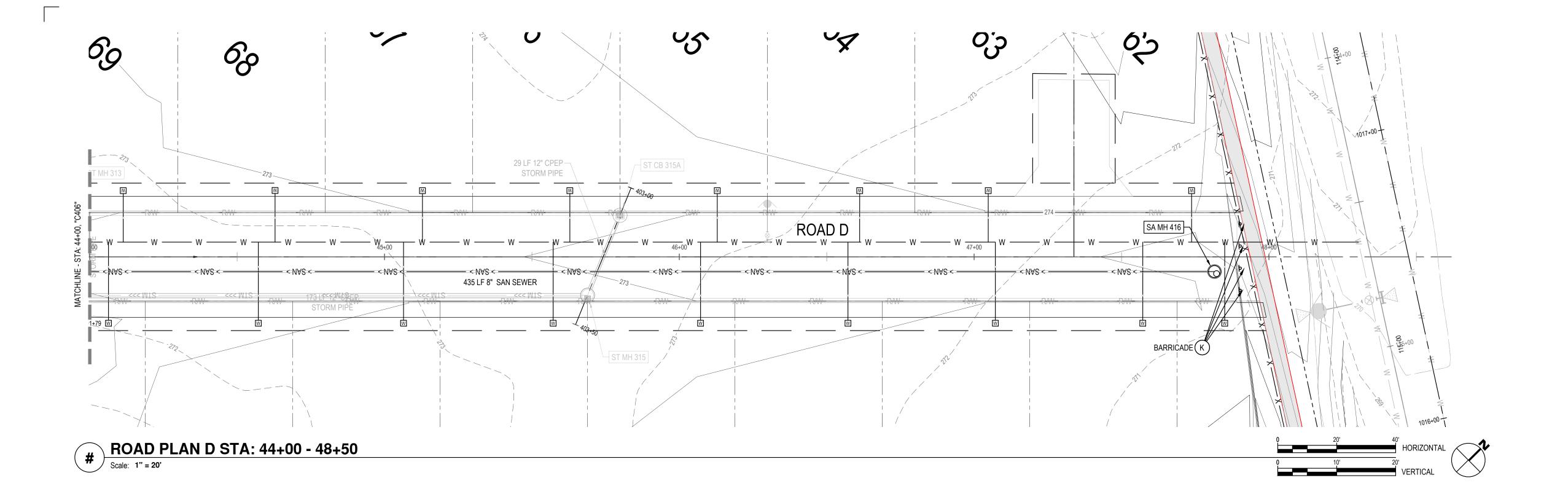
506 INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR, COORDINATE TIE-IN ACTIVITIES

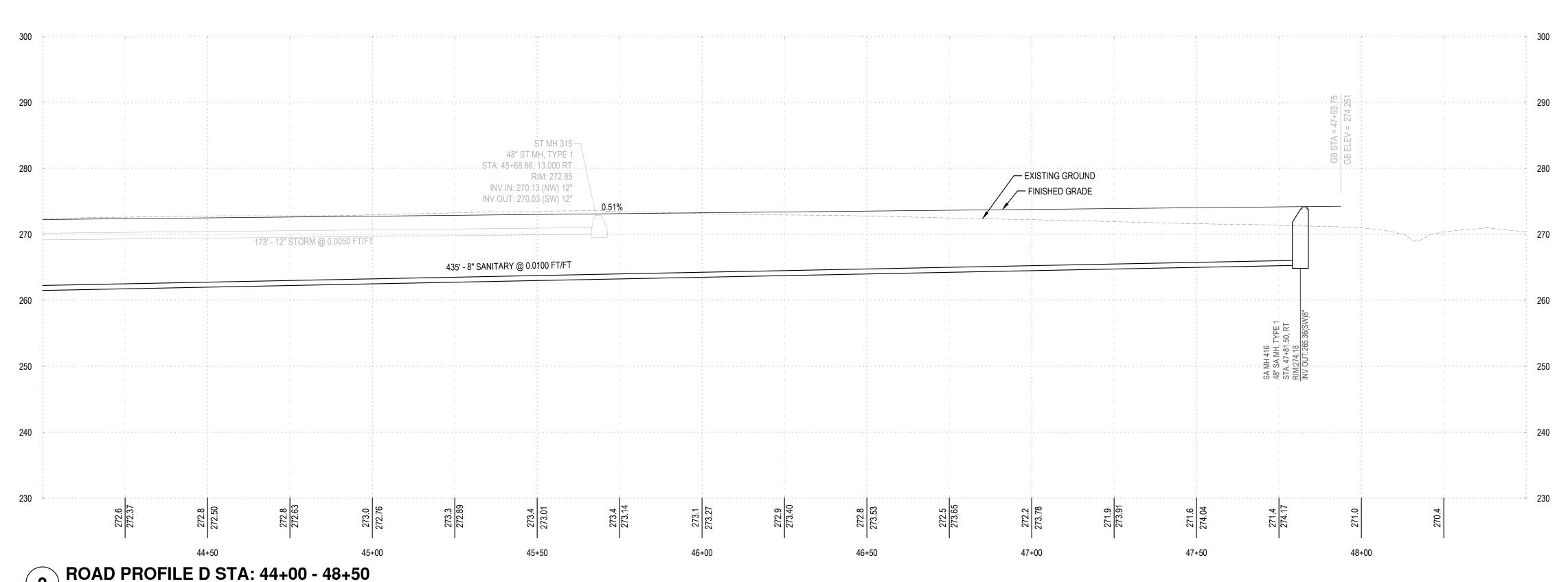
(1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS



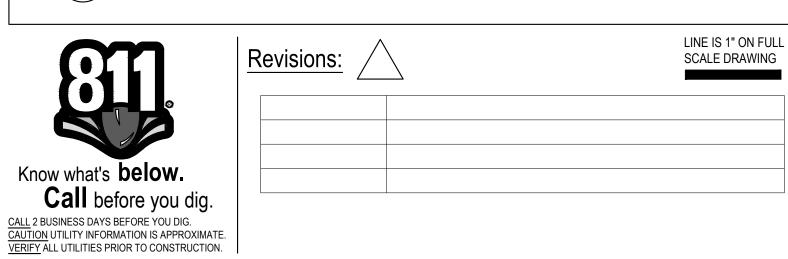
STA: 40+00 - 44+00







Scale: 1" = 20' HORIZONTAL 1=10' VERTICAL



WINDSOR ENGINEERS





COWLITZ MEADOWS

ENGINEERING SET Issue Date: 2022-10-x

TOLEDO, WA

Project Manager ES
Drawn by CKJ
Checked by TS

PLAN AND PROFILE STA: 44+00 - 48+50

C207



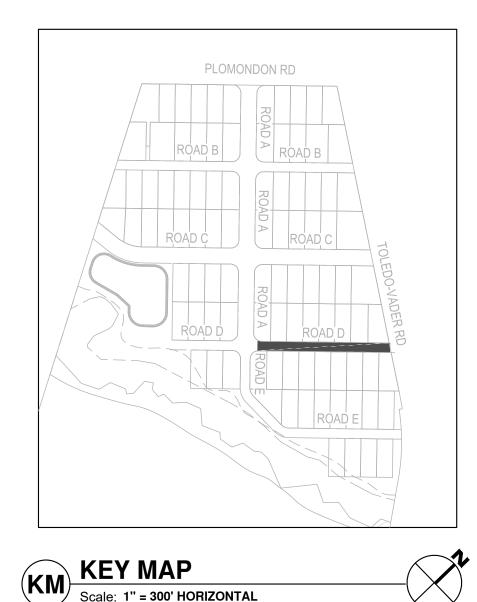
- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

WATER 500

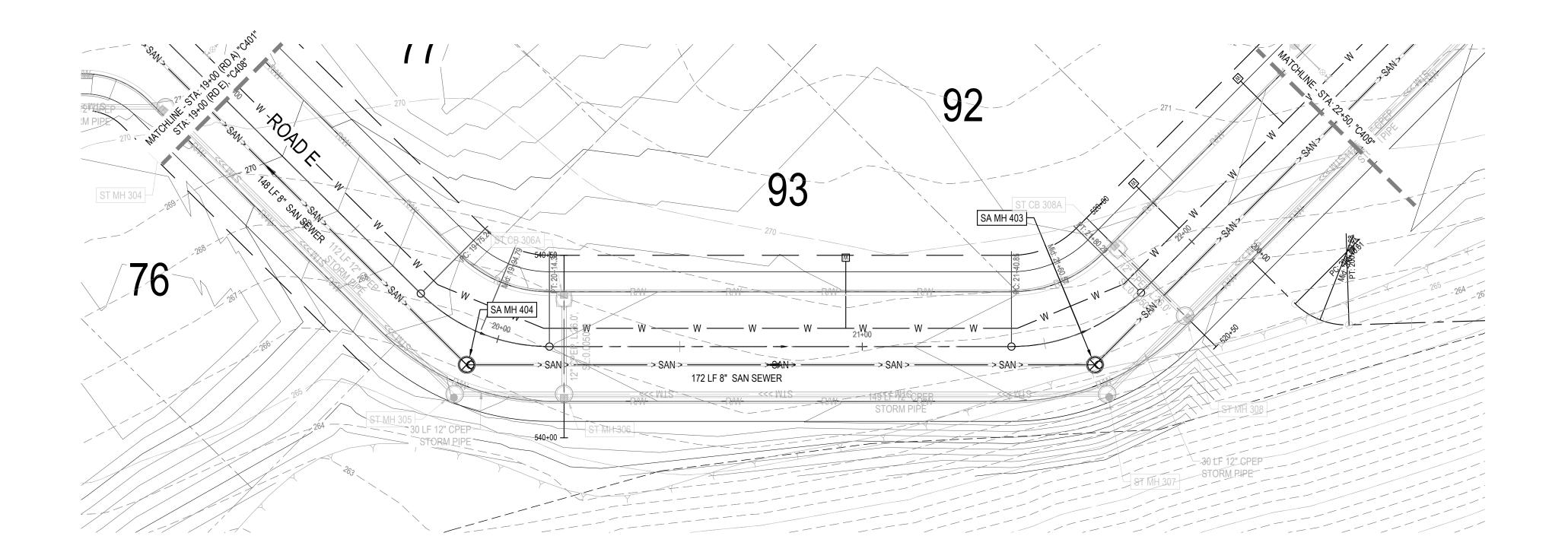
- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING: (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS (1) FIRE HYDRANT WITH THRUST BLOCK RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING: (1) CAP WITH RESTRAINT & THRUST BLOCK (1) BLOW OFF RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 506 INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR, COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION. (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G. (1) 8" SLEEVE COUPLING
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.
- 508 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

DRY UTILITIES 600

600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10' EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH UTILITY PROVIDER



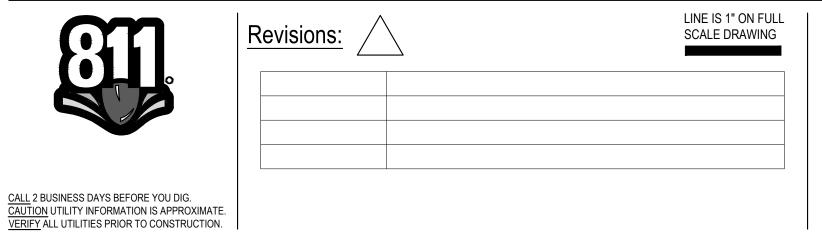




— EXISTING GROUND - FINISHED GRADE - EXISTING GROUND - FINISHED GRADE @ 0.0050 FT/FT 300 26' - 12" STORM @ 0.0050 FT/FT 290 290 ST 24X ST/ PVI STA: 19+90.79 PVI ELEV: 266.06 K: 4.39 ─ST MH 308 LVC: 50.00 48" ST MH, TYPE 1 LOW PT. STA: 19+98.89. .STA: 21+84.29, 13.000 RT . . 280 RIM: 268.44 LOW PT ELEV: 266.69 INV IN: 262.61 (NE) 12" INV IN: 265.71 (NW) 12" ST MH 305-INV OUT: 262.61 (SW) 12" - EXISTING GROUND RIM:266.96 INV IN:262.11(E)12" FINISHED GRADE INV OUT:262.11(NW)12" -4.69% 112' - 12" STORM @ 0.0022 FT/FT 148' - 8" SANITARY @ 0.0050 FT/FT)' - 12" STORM 149' - 12" STORM @ 0.0025 FT/FT @ 0.0029 FT/FT. 260 0.0020 FT/FT. SA MH 404-172' - 8" SANITARY @ 0.0100 FT/FT 48" SA MH, TYPE1 SA MH 403 STA. 19+94.79, RT 48" SA MH, TYPE1 RIM:266.52 STA. 21+60.57, RT INV IN:259.53(NW)8" RIM:268.27 INV OUT:259.43(E)8" -ST MH 307 250 - INV IN:257.71(W)8": ST N N 48" ST MH, TYPE 1 INV OUT:257.61(NE)8" 30' - 12" STORM-STA: 21+60.57, 18.239 RT @ 0.0020 FT/FT RIM: 268.72 INV IN: 262.55 (NE) 12" INV OUT: 262.55 (W) 12" 240 268.0 268.61 270.0 269.11 20+00 20+50 21+00 21+50 22+00 **ROAD PROFILE A STA: 19+00 - 22+50**



ROAD PLAN A STA: 19+00 - 22+50
| Scale: 1" = 20'



Scale: 1" = 20' HORIZONTAL 1=10' VERTICAL

WINDSOR ENGINEERS





COWLITZ MEADOWS TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x

Project Manager ES
Drawn by CKJ
Checked by TS

E - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE STA: 19+00 - 22+50



- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

WATER 500

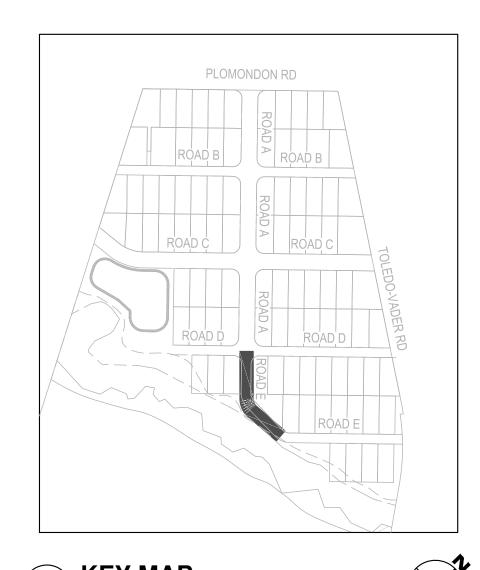
- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING: (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS (1) FIRE HYDRANT WITH THRUST BLOCK RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING: (1) CAP WITH RESTRAINT & THRUST BLOCK (1) BLOW OFF RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 506 INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR, COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION. (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G.
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.

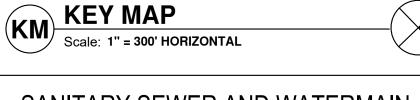
(1) 8" SLEEVE COUPLING

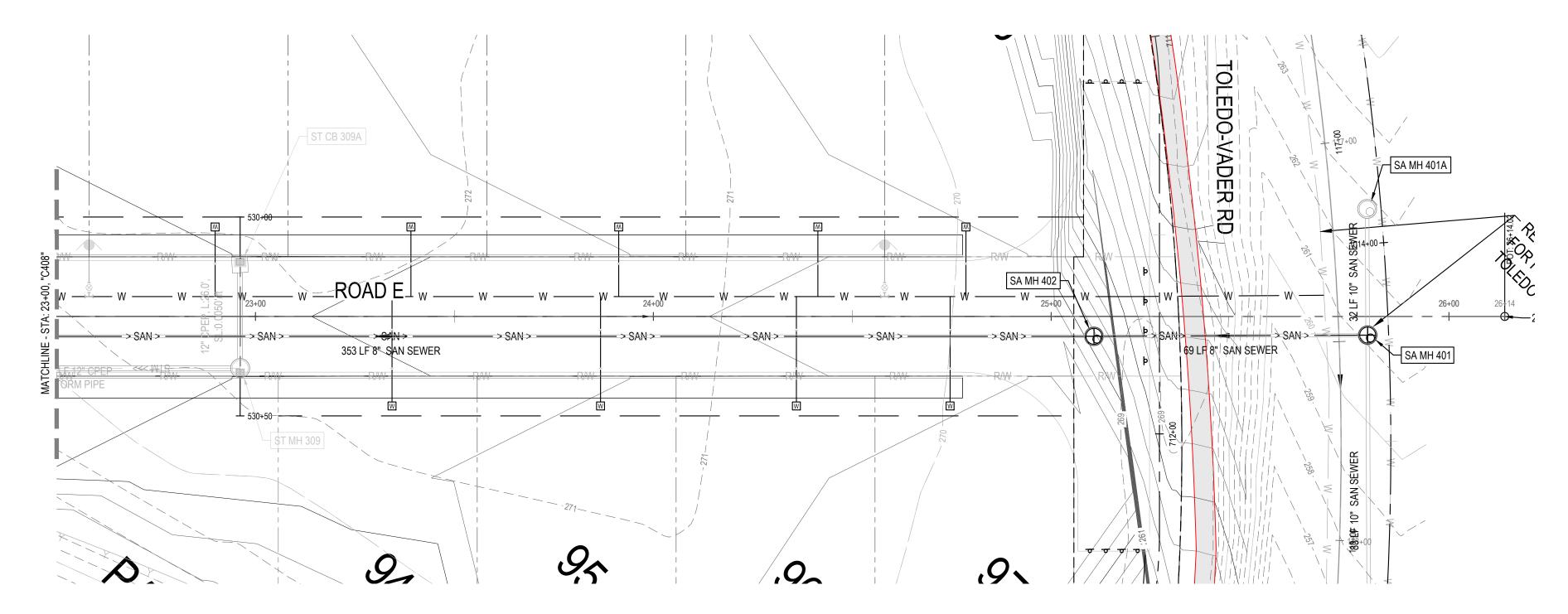
- 508 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

DRY UTILITIES 600

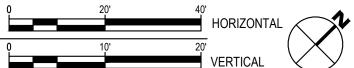
600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10' EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH UTILITY PROVIDER

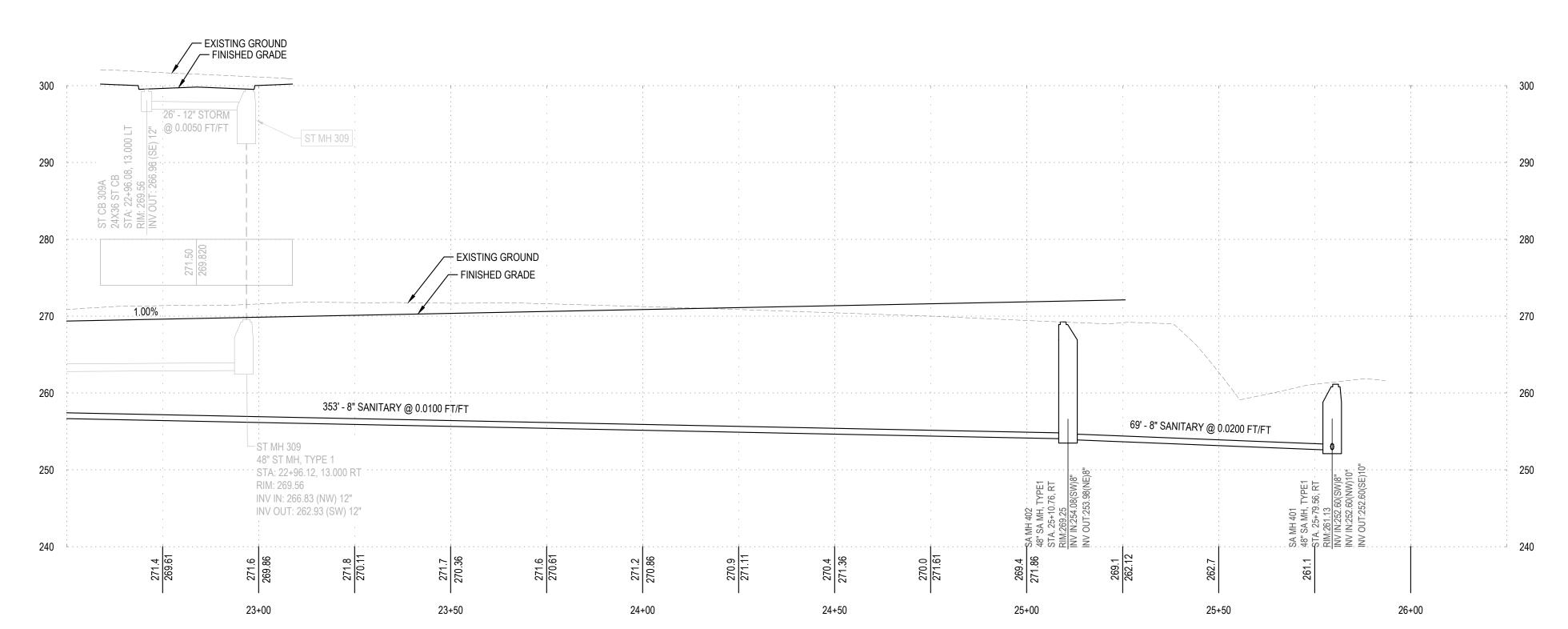






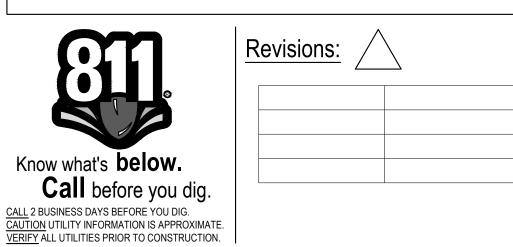
ROAD PLAN E STA: 22+50 - 26+00

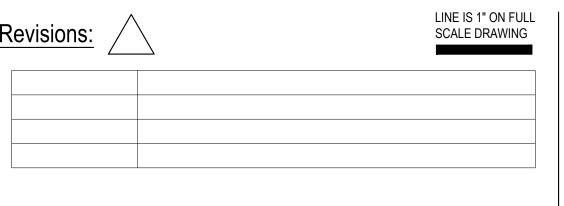




ROAD PROFILE E STA: 22+50 - 26+00







WINDSOR ENGINEERS





TOLEDO, WA

ENGINEERING SETIssue Date: 2022-10-x

Project Manager <u>ES</u>
Drawn by <u>CKJ</u>
Checked by <u>TS</u>

E - SANITARY SEWER AND WATERMAIN PLAN AND PROFILE STA: 22+50 - 26+00

409



- 400 INSTALL SANITARY SEWER PIPE. LENGTH, SIZE, AND SLOPE PER PLAN. BEDDING AND BACKFILL PER DETAIL
- 401 INSTALL SANITARY STRUCTURE. TYPE, SIZE PER PLAN. ELEVATIONS PER PROFILE.
- 402 INSTALL SANITARY SEWER LATERAL PER DETAIL. INSTALL TWO WAY CLEANOUT AT BUILDING END OF LATERAL. FIXTURES BELOW THE NEXT UPSTREAM MANHOLE RIM ELEVATION TO BE PROTECTED BY A BACKWATER VALVE.
- 403 INSTALL CLEAN OUTS PER DETAIL ON SHEET C491.

WATER 500

- 500 INSTALL 8" C900 PVC WATER MAIN. BEDDING AND BACKFILL PER DETAIL.
- 501 INSTALL STD FIRE HYDRANT ASSEMBLY PER DETAIL, INCLUDING:
 (1) 8" X 6" MJ X SIDE FLG TEE WITH THRUST BLOCK
 (1) 6" GATE VALVE, FLG X MJ WITH M.L.R.GS
 (1) FIRE HYDRANT WITH THRUST BLOCK
 RESTRAIN ALL PIPE ON EACH SIDE OF TEE AND TO HYDRANT.
- 502 INSTALL 1" WATER METER & SERVICE PER DETAIL. WA STATE APPROVED BACKFLOW DEVICE TO BE USED. IRRIGATION STUB TEE'D OFF AFTER
- 503 INSTALL STD BLOW OFF ASSEMBLY PER DETAIL INCLUDING:
 (1) CAP WITH RESTRAINT & THRUST BLOCK
 (1) BLOW OFF
 RESTRAIN JOINTS WITHIN 105' OF END PIPE.
- INSTALL WATER ASSEMBLY.CONNECT TO EXISTING WATER LINE PENDING APPROVAL FROM WATER INSPECTOR. COORDINATE TIE-IN ACTIVITIES WITH INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION.

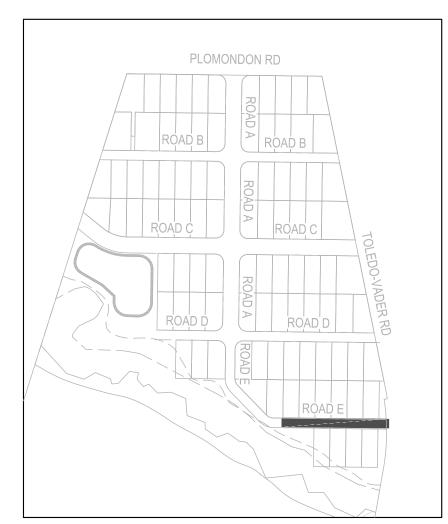
 (1) 8" X 8" FLG TEE WITH THRUST BLOCK

 (3) 8" GATE VALVE, FLG X MJ, WITH M.L.R.G.

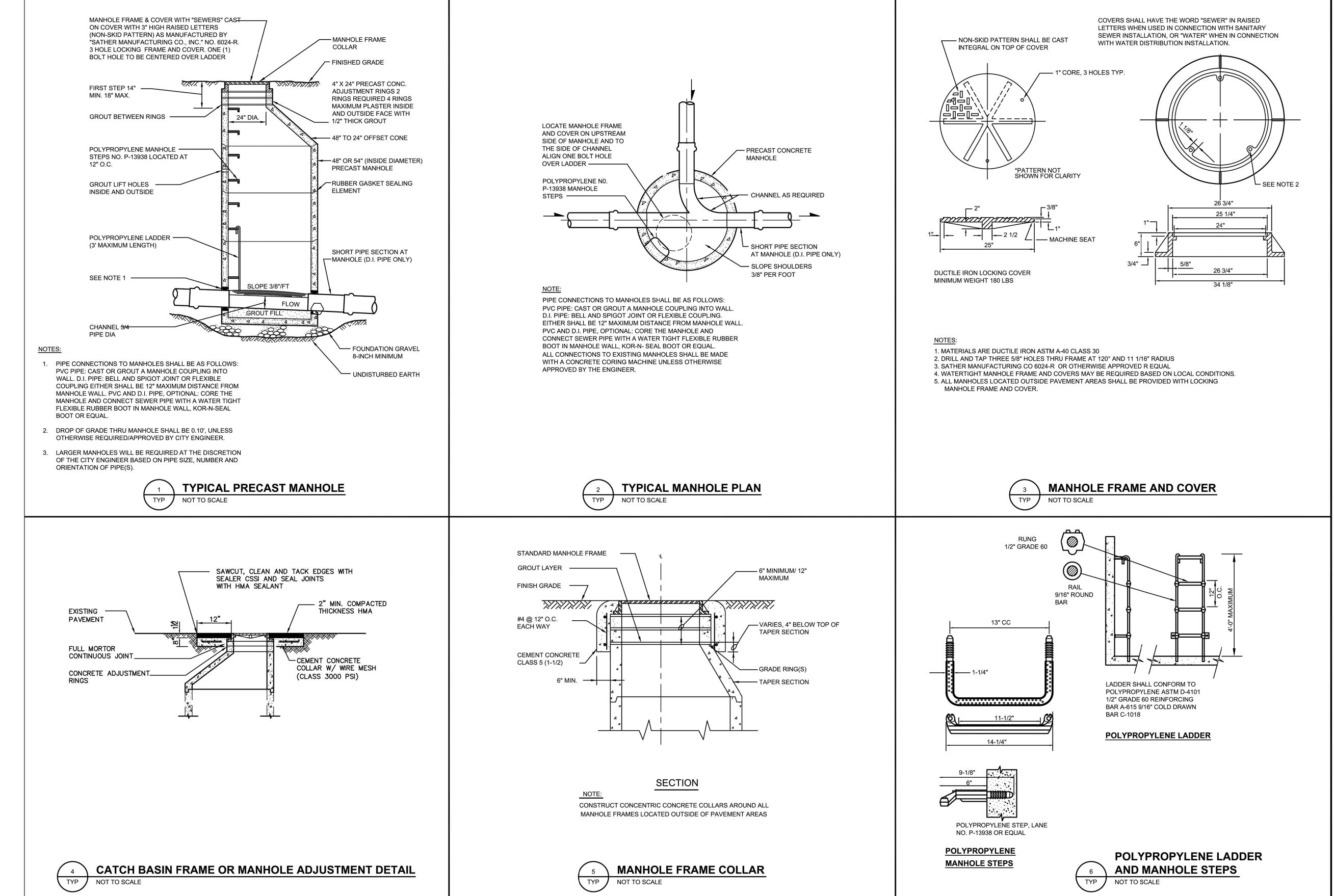
 (1) 8" SLEEVE COUPLING
- 507 INSTALL WATER ASSEMBLY INCLUDING: (1) 8" X 8" FLG TEE WITH THRUST BLOCK (3) 8" GATE VALVE, FLG X MJ WITH M.L.R.G.
- 508 INSTALL WATER ASSEMBLY INCLUDING:
 (1) 8" X 8" MJ BEND WITH THRUST BLOCK, WITH M.L.R.G. RESTRAIN JOINTS
 WITHIN 105' OF END PIPE.
- 509 INSTALL WATER ASSEMBLY INCLUDING: (1) WATER SAMPLING STATION PER DETAIL
- 510 HORIZONTALLY/VERTICALLY DEFLECT PER MANUFACTURES SPECIFICATIONS. DEFLECT 8" AT 200 FT MINIMUM RADIUS.

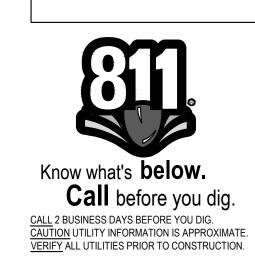
DRY UTILITIES 600

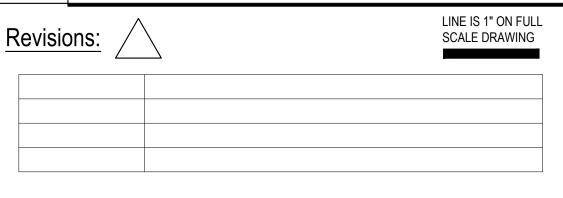
600 PRIVATE UTILITIES (POWER, PHONE, GAS, CABLE, ETC) WITHIN 10'
EASEMENT ALONG LOT LINE. DESIGN BY OTHERS. COORDINATE WITH
UTILITY PROVIDER





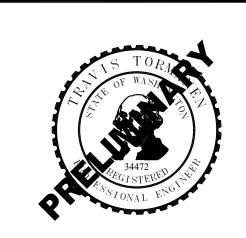














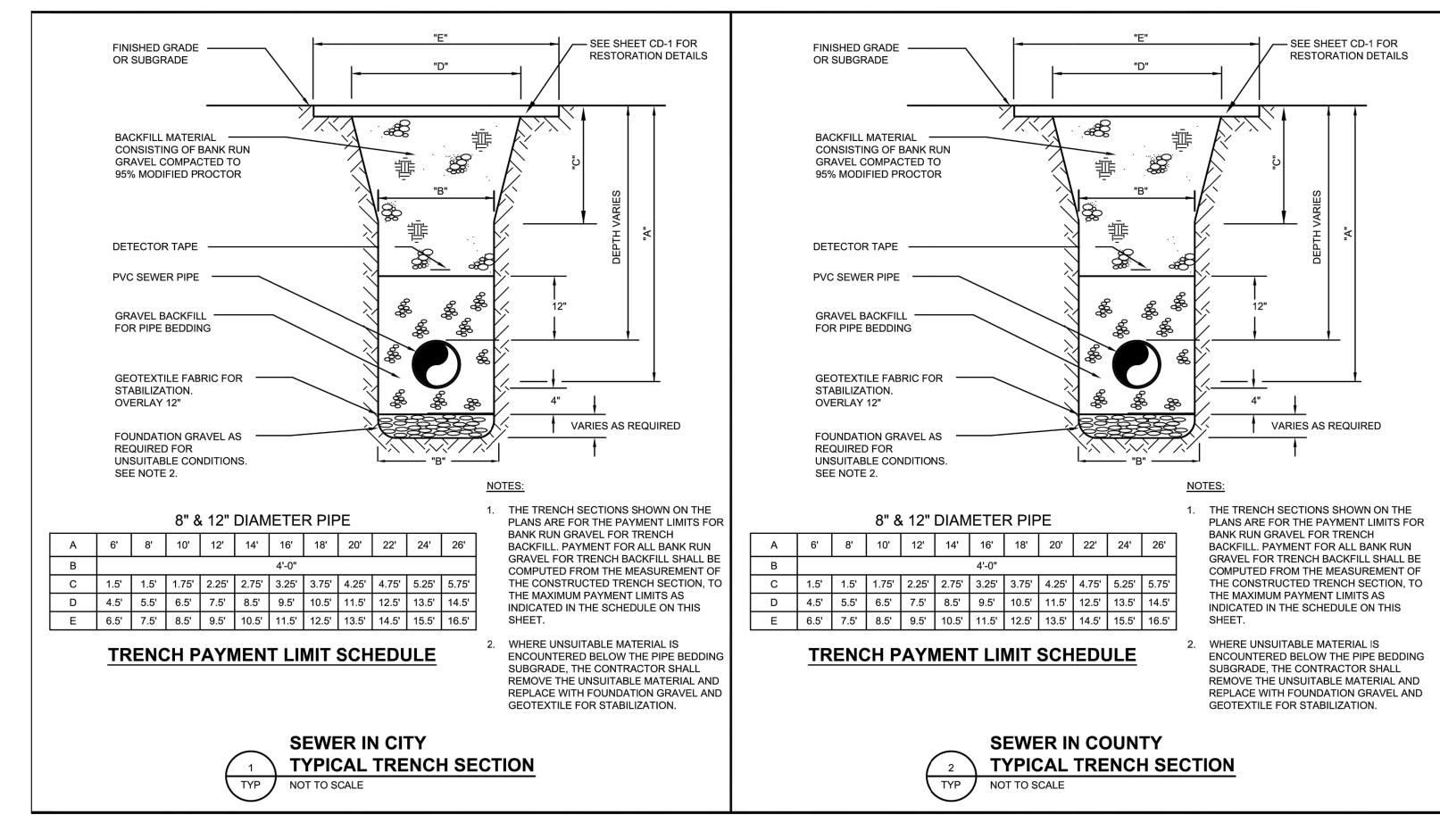
TOLEDO, WA

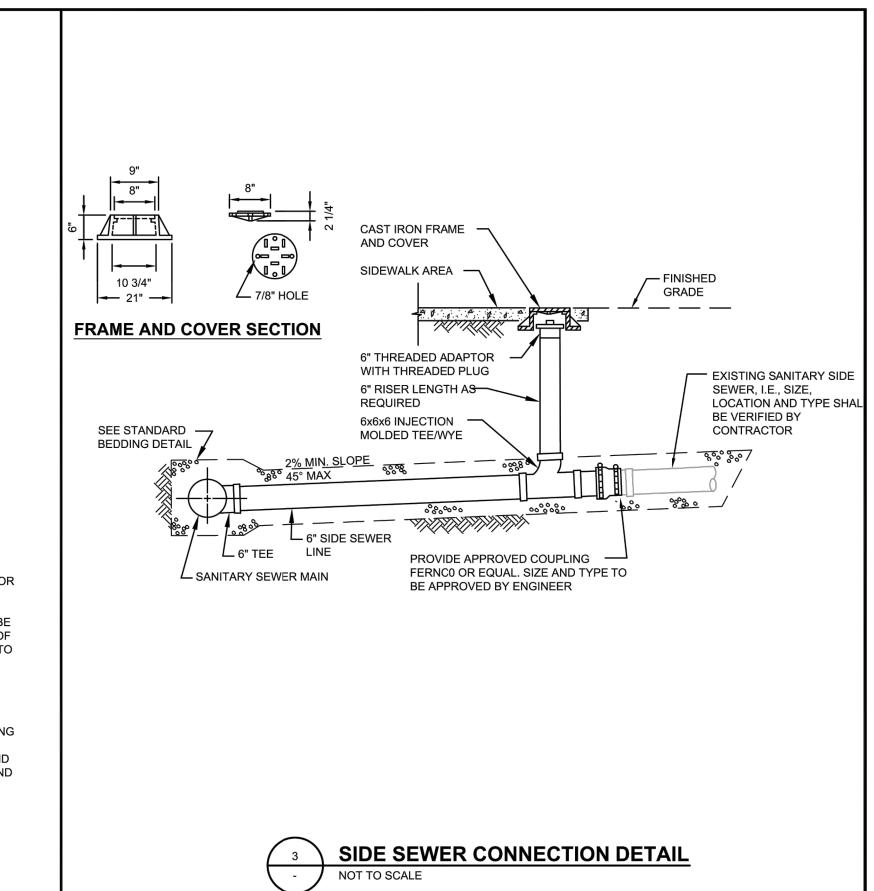
SANITARY SEWER DETAILS

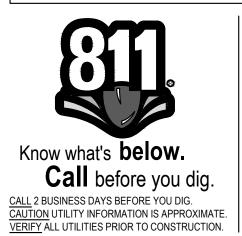
ENGINEERING SET

Issue Date: 2022-10-x

Project Manager ES
Drawn by CKJ
Checked by TS







Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS



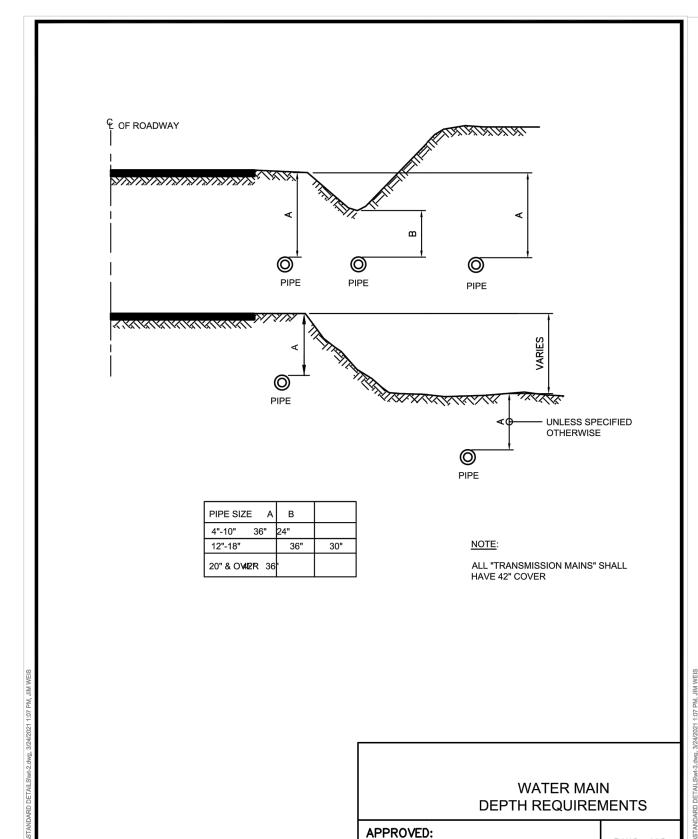


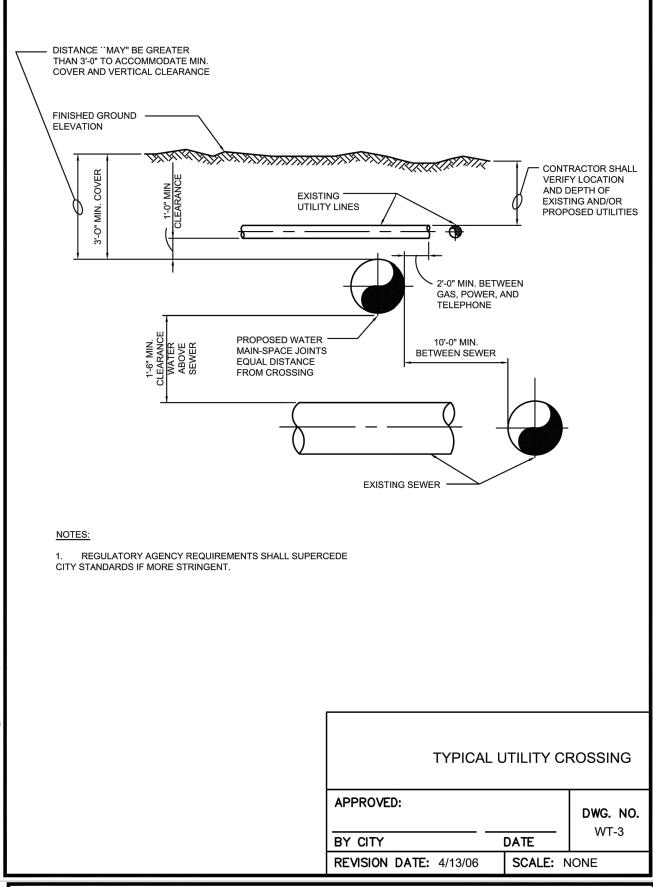
COWLITZ MEADOWS
TOLEDO, WA

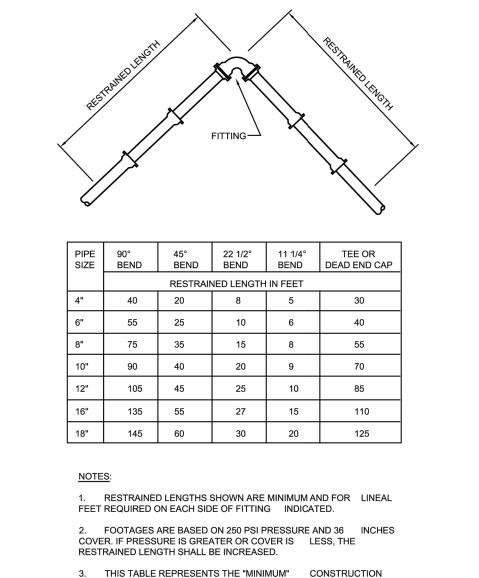
ENGINEERING SETIssue Date: 2022-10-x

SANITARY SEWER DETAILS

Project Manager ES CKJ Checked by TS C491

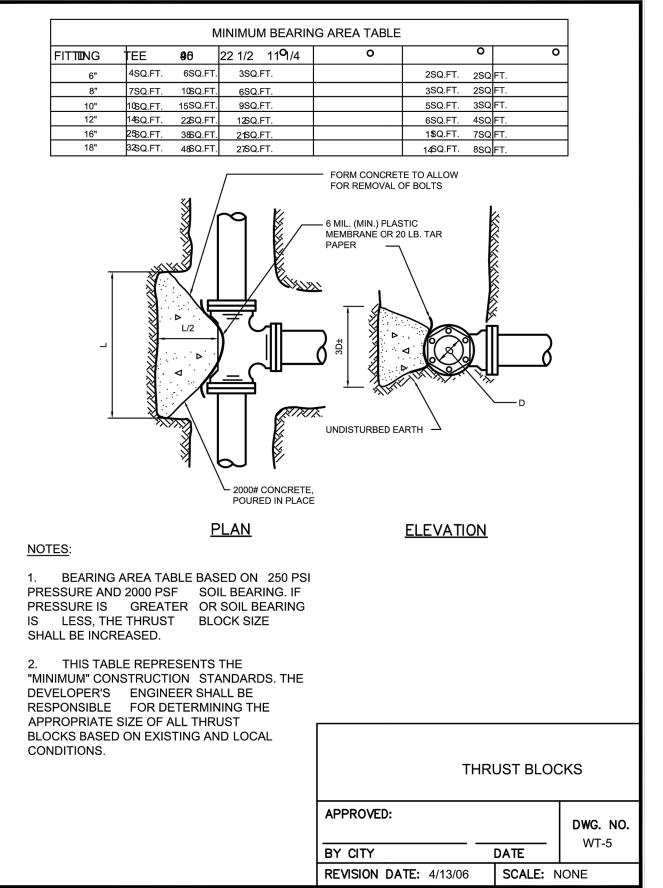


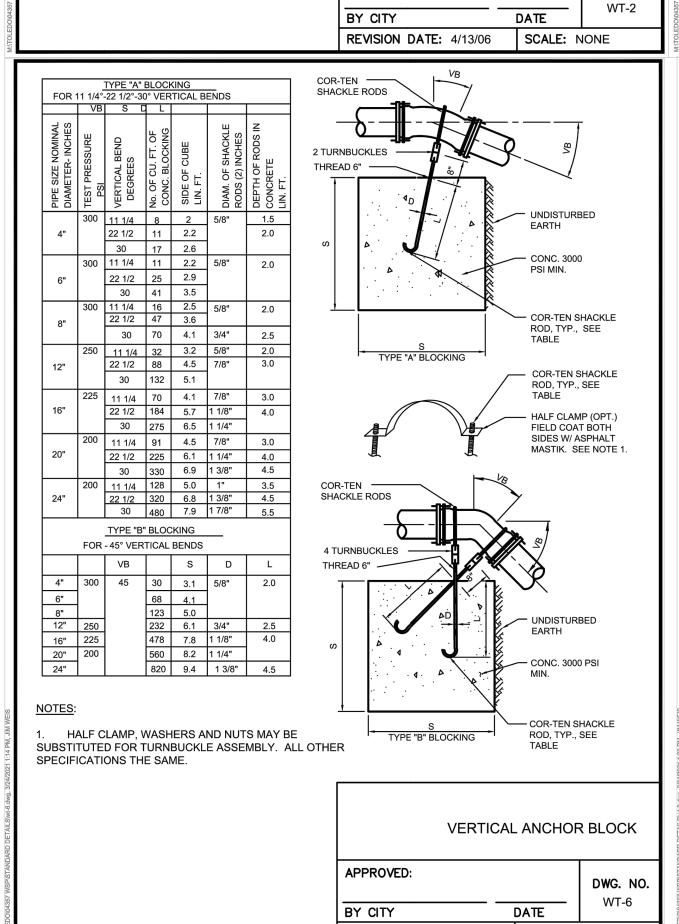


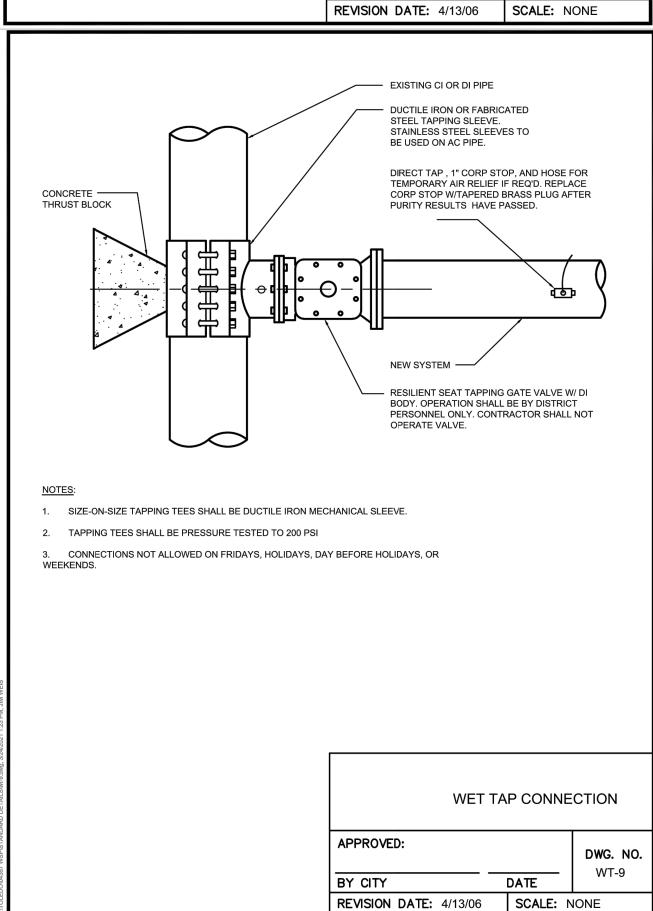


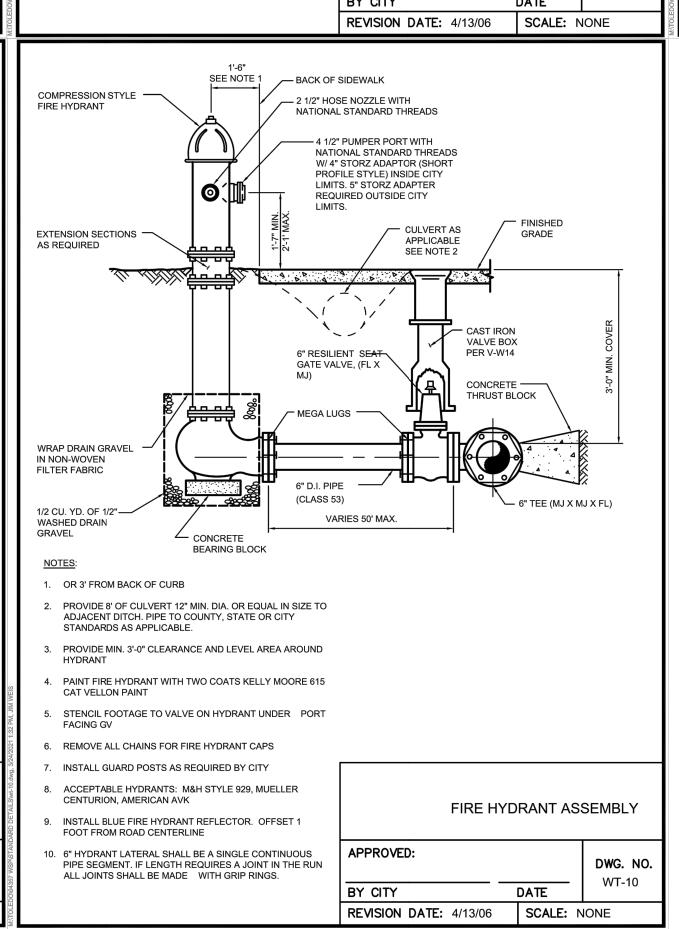
3. THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARDS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE RESTRAINED LENGTHS.

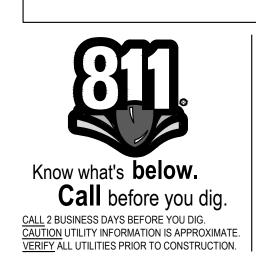
		//24/2021 1:06 PM, J
THRUST RESTRAINT FOR DUCTILE IRON PIPE		
APPROVED: BY CITY DATE	DWG. NO. WT-4	M:TOLEDO\04367 WSP\STANDARD DETAILS\wt-5.dwg, 3/24/2021
	SCALE: NONE	

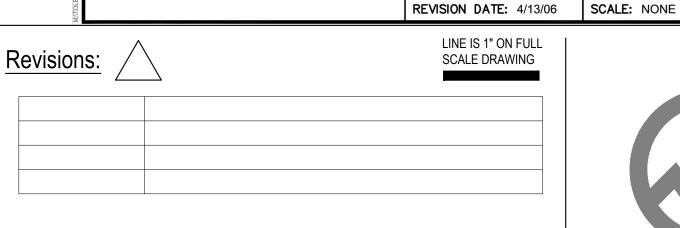












WINDSOR ENGINEERS

All Rights Reserved.



DWG. NO.

Vancouver, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 21217

Copyright 2021 By Windsor Engineers, LLC



COWLITZ MEADOWS

TOLEDO, WA

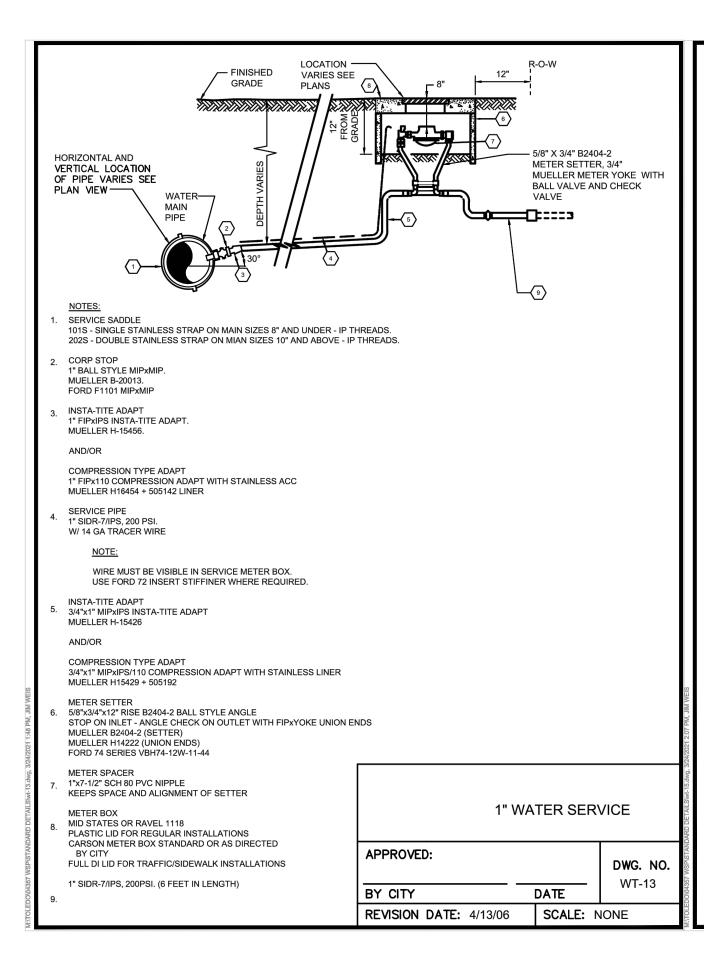
ENGINEERING SET Issue Date: 2022-10-x

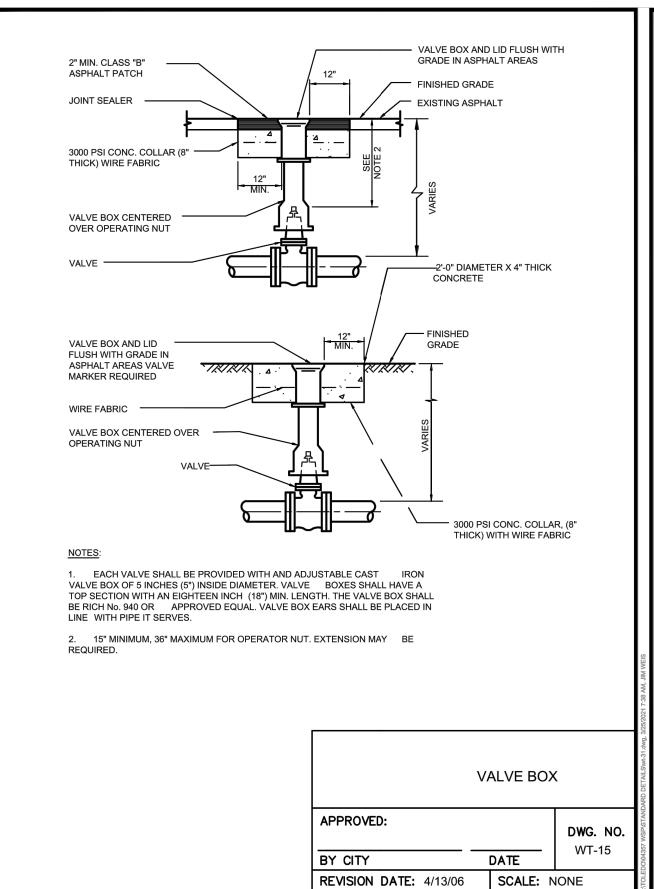
WATER DETAILS

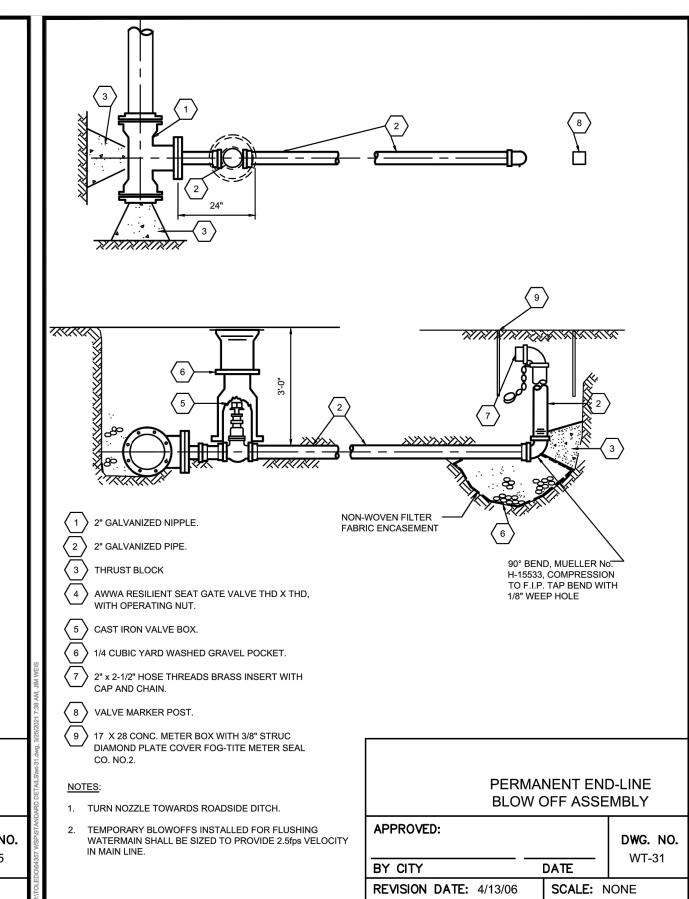
Project Manager ES

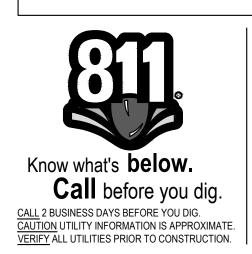
Drawn by CKJ

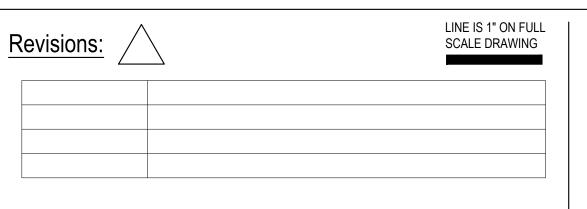
Checked by TS











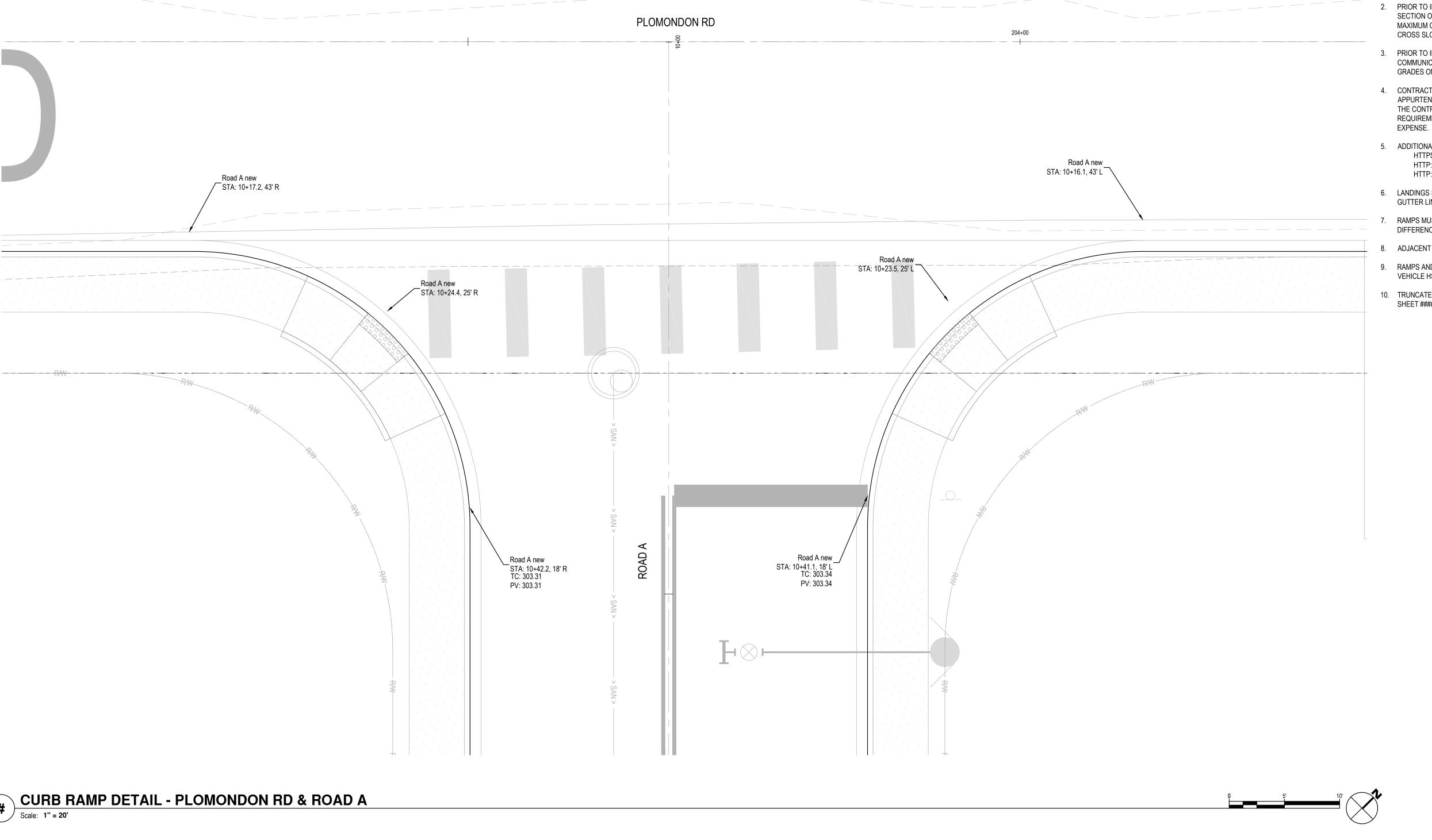




COWLITZ MEADOWS TOLEDO, WA

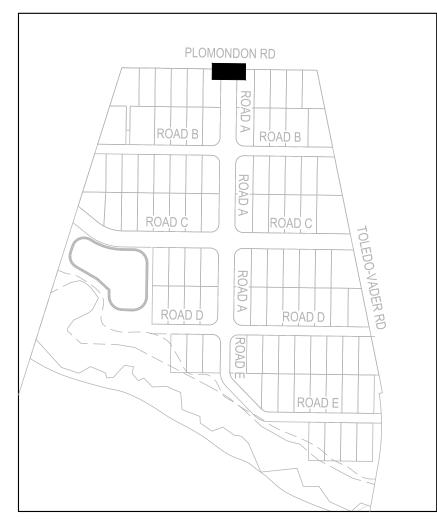
ENGINEERING SET Issue Date: 2022-10-x **WATER DETAILS**

Project Manager ES
Drawn by CKJ
Checked by TS



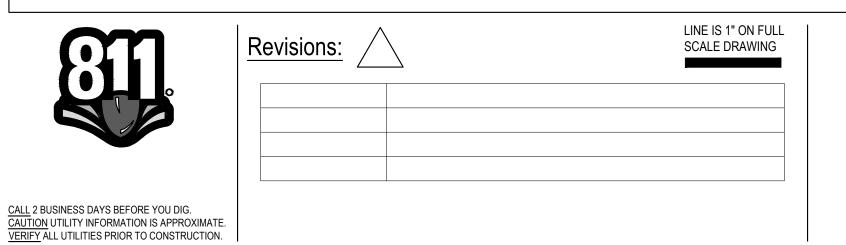
- WARNING - BE AWARE OF ADA BEFORE CONSTRUCTING CURBS:

- 1. ALL CURB RAMPS SHALL MEET THE REQUIREMENTS OF THE MOST CURRENT VERSION OF THE PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) PUBLISHED BY THE U.S. ACCESS BOARD.
- 2. PRIOR TO INSTALLING ANY CURBS FOR EACH RAMP LOCATION, THE CONTRACTOR SHALL CHECK AND ADJUST THE SECTION OF CURB LINE WHERE THE CURB RAMP MEETS THE CURB & ANY SIDEWALK RAMP LANDING TO HAVE A MAXIMUM CROSS SLOPE OF 2%. FOR EXAMPLE, A 5 FOOT WIDE RAMP AT THE GUTTER LINE CAN HAVE A MAXIMUM CROSS SLOPE CHANGE OF UP TO 0.1 FEET AT A 2% CROSS SLOPE.
- 3. PRIOR TO INSTALLING ANY CONCRETE, THE CONTRACTOR SHALL BE DILIGENT AND PROVIDE EXTRA COMMUNICATION WITH THE CONCRETE SUBCONTRACTORS. THE CONTRACTOR SHALL ALSO DOUBLE CHECK THE GRADES ON ALL FORMS OR STRING LINE PRIOR TO INSTALLING CONCRETE.
- 4. CONTRACTOR SHALL TAKE CARE AND MAKE ADJUSTMENTS SO THAT NO GRATES, VAULTS, ACCESS COVERS, OR APPURTENANCES ARE PLACED OR LOCATED WITHIN OR IN FRONT OF A CURB RAMP OR LANDING ULTIMATELY, IT IS THE CONTRACTORS RESPONSIBILITY TO MAKE SURE ALL CURB RETURNS AND CURB RAMPS MEET ADA REQUIREMENTS. RAMPS THAT DO NOT MEET THE REQUIREMENTS, WILL BE REPLACED AT THE CONTRACTORS
- 5. ADDITIONAL RESOURCES AND REFERENCES THAT EXPLAIN ADA REQUIREMENTS FOR THE CONTRACTOR: HTTPS://WWW.WSDOT.WA.GOV/
 - HTTP://WWW.BIKEWALK.ORG/PDF/SOPADA_FHWA.PDF HTTP://WWW.ACCESS-BOARD.GOV/PROWAC.DRAFT.PDF
- 6. LANDINGS SHALL BE SLOPED BETWEEN 0.5% (MINIMUM) TO 2% (MAXIMUM) IN THE SAME FLOW DIRECTION AS GUTTER LINE.
- RAMPS MUST BE 12:1 (8.33%) OR FLATTER. THE RAMP SLOPE ON ONE SIDE SHALL VARY TO MATCH THE DIFFERENCE IN THE GUTTER LINE SLOPE AND LANDING SLOPE.
- ADJACENT MOUNTABLE SIDEWALKS SHALL BE A MINIMUM OF 6" THICKNESS.
- RAMPS AND ADJACENT SIDEWALKS AND DETECTABLE DOME DEVICES MUST BE TRAFFIC RATED FOR EMERGENCY VEHICLE HS-25 LOADING.
- 10. TRUNCATED DOMES SHALL BE PROVIDED PER THE CITY OF WINLOCK STANDARD DRAWING NUMBER 2-10 ON SHEET ####.



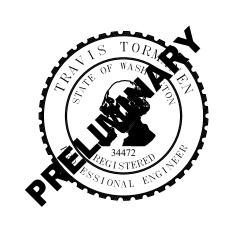






WINDSOR ENGINEERS







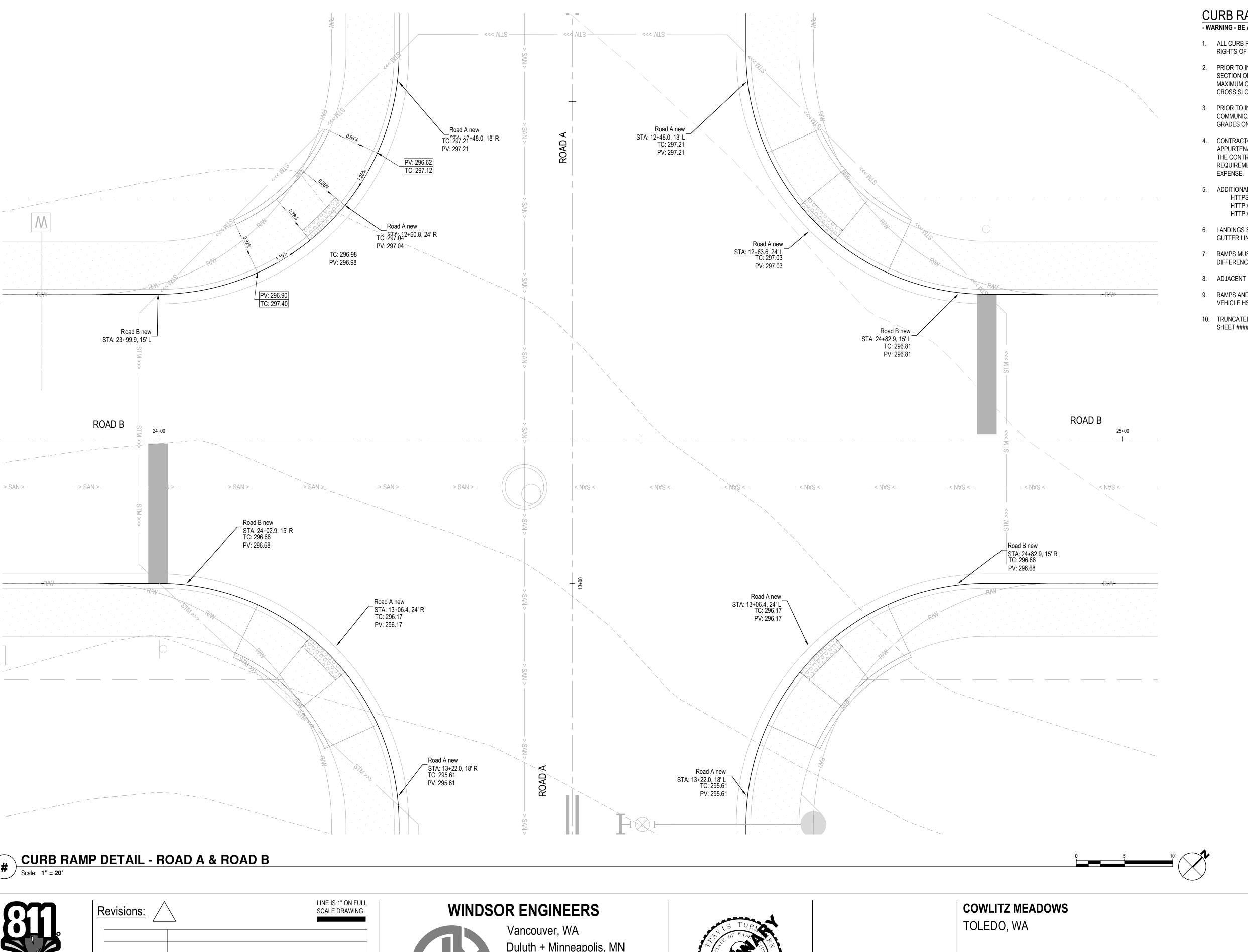
TOLEDO, WA

ENGINEERING SET Issue Date: 2022-10-x INTERSECTION ROADS A & PLOMONDON

Project Manager ES

Drawn by CKJ

Checked by TS



- WARNING - BE AWARE OF ADA BEFORE CONSTRUCTING CURBS:

1. ALL CURB RAMPS SHALL MEET THE REQUIREMENTS OF THE MOST CURRENT VERSION OF THE PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) PUBLISHED BY THE U.S. ACCESS BOARD.

2. PRIOR TO INSTALLING ANY CURBS FOR EACH RAMP LOCATION, THE CONTRACTOR SHALL CHECK AND ADJUST THE SECTION OF CURB LINE WHERE THE CURB RAMP MEETS THE CURB & ANY SIDEWALK RAMP LANDING TO HAVE A MAXIMUM CROSS SLOPE OF 2%. FOR EXAMPLE, A 5 FOOT WIDE RAMP AT THE GUTTER LINE CAN HAVE A MAXIMUM CROSS SLOPE CHANGE OF UP TO 0.1 FEET AT A 2% CROSS SLOPE.

3. PRIOR TO INSTALLING ANY CONCRETE, THE CONTRACTOR SHALL BE DILIGENT AND PROVIDE EXTRA COMMUNICATION WITH THE CONCRETE SUBCONTRACTORS. THE CONTRACTOR SHALL ALSO DOUBLE CHECK THE GRADES ON ALL FORMS OR STRING LINE PRIOR TO INSTALLING CONCRETE.

4. CONTRACTOR SHALL TAKE CARE AND MAKE ADJUSTMENTS SO THAT NO GRATES, VAULTS, ACCESS COVERS, OR APPURTENANCES ARE PLACED OR LOCATED WITHIN OR IN FRONT OF A CURB RAMP OR LANDING ULTIMATELY, IT IS THE CONTRACTORS RESPONSIBILITY TO MAKE SURE ALL CURB RETURNS AND CURB RAMPS MEET ADA REQUIREMENTS. RAMPS THAT DO NOT MEET THE REQUIREMENTS, WILL BE REPLACED AT THE CONTRACTORS

5. ADDITIONAL RESOURCES AND REFERENCES THAT EXPLAIN ADA REQUIREMENTS FOR THE CONTRACTOR: HTTPS://WWW.WSDOT.WA.GOV/

HTTP://WWW.BIKEWALK.ORG/PDF/SOPADA_FHWA.PDF HTTP://WWW.ACCESS-BOARD.GOV/PROWAC.DRAFT.PDF

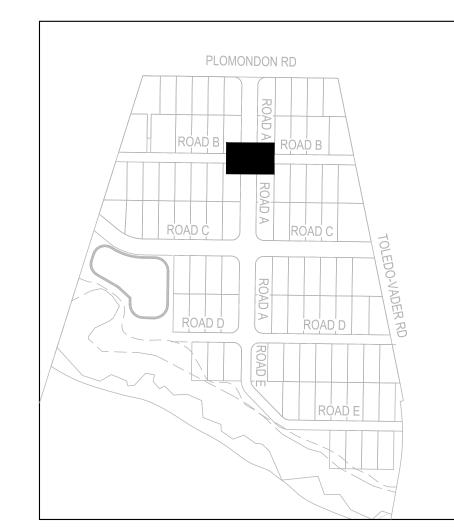
6. LANDINGS SHALL BE SLOPED BETWEEN 0.5% (MINIMUM) TO 2% (MAXIMUM) IN THE SAME FLOW DIRECTION AS

7. RAMPS MUST BE 12:1 (8.33%) OR FLATTER. THE RAMP SLOPE ON ONE SIDE SHALL VARY TO MATCH THE DIFFERENCE IN THE GUTTER LINE SLOPE AND LANDING SLOPE.

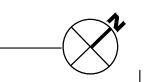
8. ADJACENT MOUNTABLE SIDEWALKS SHALL BE A MINIMUM OF 6" THICKNESS.

9. RAMPS AND ADJACENT SIDEWALKS AND DETECTABLE DOME DEVICES MUST BE TRAFFIC RATED FOR EMERGENCY

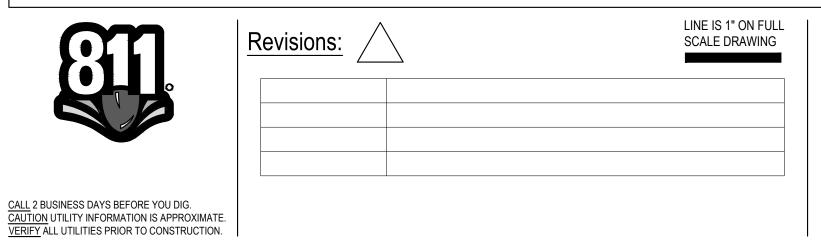
10. TRUNCATED DOMES SHALL BE PROVIDED PER THE CITY OF WINLOCK STANDARD DRAWING NUMBER 2-10 ON SHEET ####.













Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC

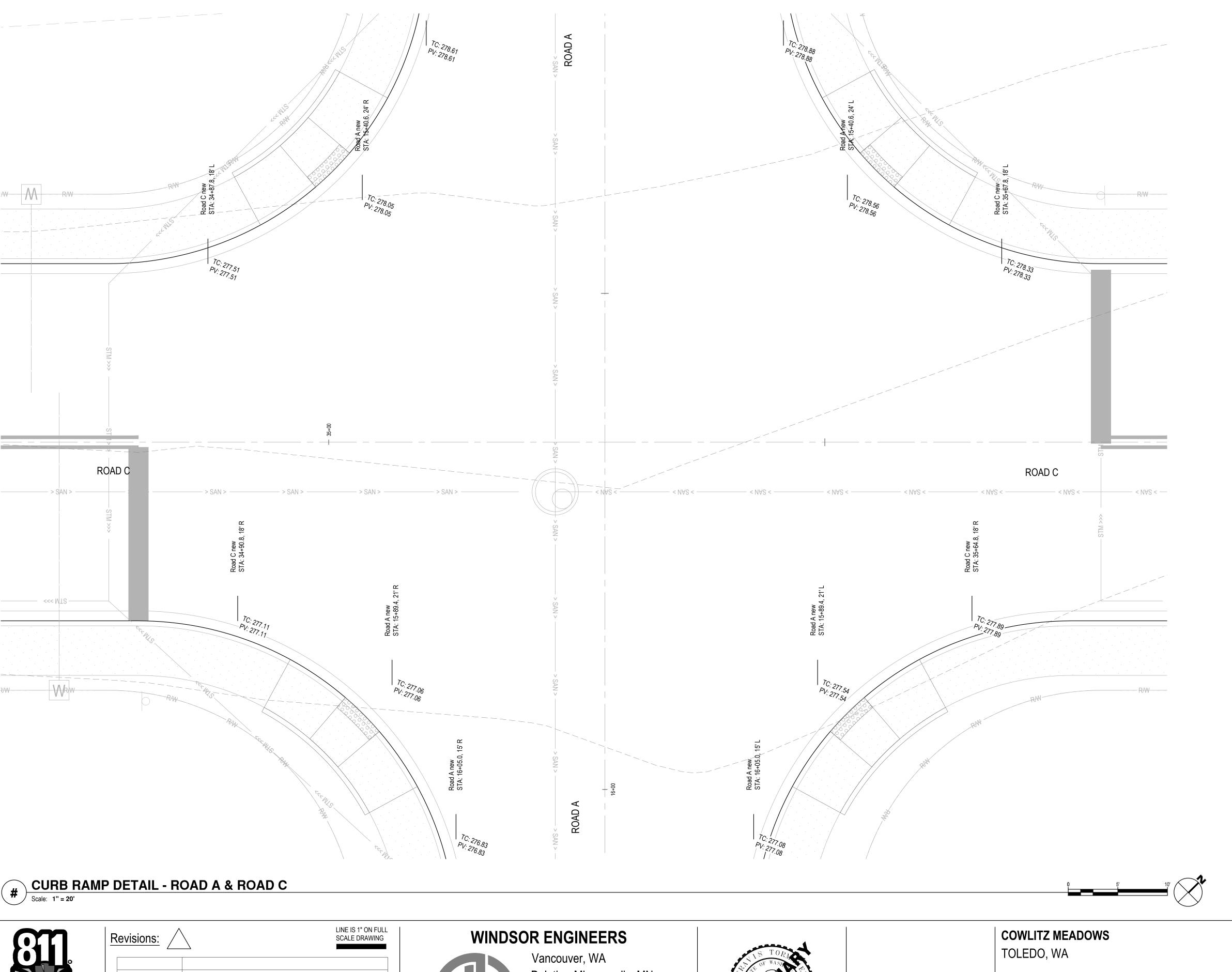


ENGINEERING SET Issue Date: 2022-10-x INTERSECTION ROADS A & B

Project Manager ES

Drawn by CKJ

Checked by TS

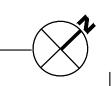


- WARNING - BE AWARE OF ADA BEFORE CONSTRUCTING CURBS:

- 1. ALL CURB RAMPS SHALL MEET THE REQUIREMENTS OF THE MOST CURRENT VERSION OF THE PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) PUBLISHED BY THE U.S. ACCESS BOARD.
- 2. PRIOR TO INSTALLING ANY CURBS FOR EACH RAMP LOCATION, THE CONTRACTOR SHALL CHECK AND ADJUST THE SECTION OF CURB LINE WHERE THE CURB RAMP MEETS THE CURB & ANY SIDEWALK RAMP LANDING TO HAVE A MAXIMUM CROSS SLOPE OF 2%. FOR EXAMPLE, A 5 FOOT WIDE RAMP AT THE GUTTER LINE CAN HAVE A MAXIMUM CROSS SLOPE CHANGE OF UP TO 0.1 FEET AT A 2% CROSS SLOPE.
- 3. PRIOR TO INSTALLING ANY CONCRETE, THE CONTRACTOR SHALL BE DILIGENT AND PROVIDE EXTRA COMMUNICATION WITH THE CONCRETE SUBCONTRACTORS. THE CONTRACTOR SHALL ALSO DOUBLE CHECK THE GRADES ON ALL FORMS OR STRING LINE PRIOR TO INSTALLING CONCRETE.
- 4. CONTRACTOR SHALL TAKE CARE AND MAKE ADJUSTMENTS SO THAT NO GRATES, VAULTS, ACCESS COVERS, OR APPURTENANCES ARE PLACED OR LOCATED WITHIN OR IN FRONT OF A CURB RAMP OR LANDING ULTIMATELY, IT IS THE CONTRACTORS RESPONSIBILITY TO MAKE SURE ALL CURB RETURNS AND CURB RAMPS MEET ADA REQUIREMENTS. RAMPS THAT DO NOT MEET THE REQUIREMENTS, WILL BE REPLACED AT THE CONTRACTORS EXPENSE.
- 5. ADDITIONAL RESOURCES AND REFERENCES THAT EXPLAIN ADA REQUIREMENTS FOR THE CONTRACTOR: HTTPS://WWW.WSDOT.WA.GOV/
 - HTTP://WWW.BIKEWALK.ORG/PDF/SOPADA_FHWA.PDF HTTP://WWW.ACCESS-BOARD.GOV/PROWAC.DRAFT.PDF
- 6. LANDINGS SHALL BE SLOPED BETWEEN 0.5% (MINIMUM) TO 2% (MAXIMUM) IN THE SAME FLOW DIRECTION AS
- 7. RAMPS MUST BE 12:1 (8.33%) OR FLATTER. THE RAMP SLOPE ON ONE SIDE SHALL VARY TO MATCH THE DIFFERENCE IN THE GUTTER LINE SLOPE AND LANDING SLOPE.
- 8. ADJACENT MOUNTABLE SIDEWALKS SHALL BE A MINIMUM OF 6" THICKNESS.
- 9. RAMPS AND ADJACENT SIDEWALKS AND DETECTABLE DOME DEVICES MUST BE TRAFFIC RATED FOR EMERGENCY
- 10. TRUNCATED DOMES SHALL BE PROVIDED PER THE CITY OF WINLOCK STANDARD DRAWING NUMBER 2-10 ON SHEET ####.

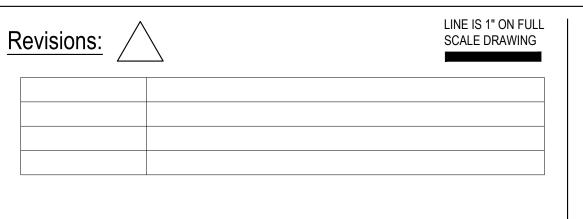








CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.





Duluth + Minneapolis, MN www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC All Rights Reserved.

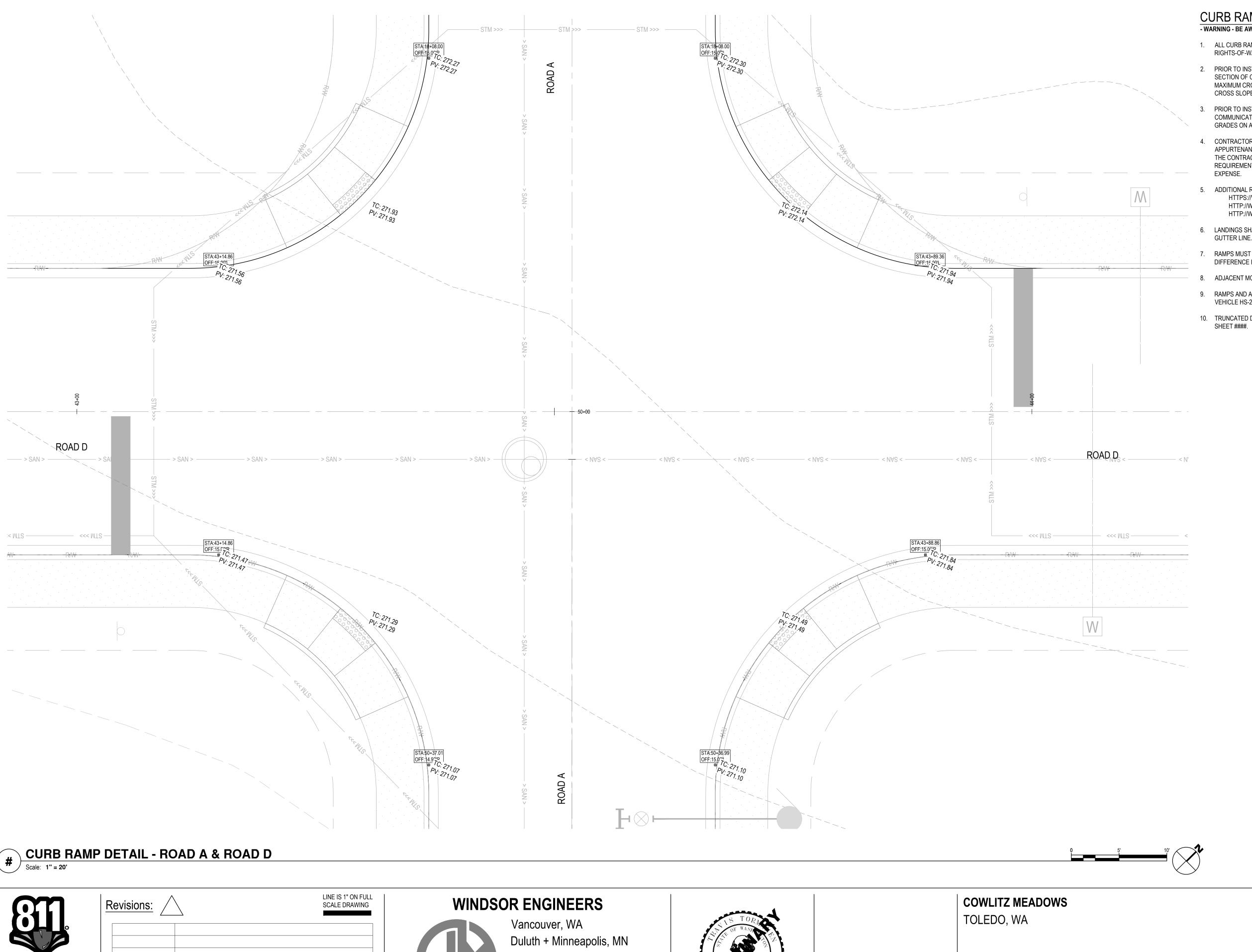


ENGINEERING SET Issue Date: 2022-10-x INTERSECTION ROADS A & C

Project Manager ES

Drawn by CKJ

Checked by TS



- WARNING - BE AWARE OF ADA BEFORE CONSTRUCTING CURBS:

1. ALL CURB RAMPS SHALL MEET THE REQUIREMENTS OF THE MOST CURRENT VERSION OF THE PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) PUBLISHED BY THE U.S. ACCESS BOARD.

2. PRIOR TO INSTALLING ANY CURBS FOR EACH RAMP LOCATION, THE CONTRACTOR SHALL CHECK AND ADJUST THE SECTION OF CURB LINE WHERE THE CURB RAMP MEETS THE CURB & ANY SIDEWALK RAMP LANDING TO HAVE A MAXIMUM CROSS SLOPE OF 2%. FOR EXAMPLE, A 5 FOOT WIDE RAMP AT THE GUTTER LINE CAN HAVE A MAXIMUM CROSS SLOPE CHANGE OF UP TO 0.1 FEET AT A 2% CROSS SLOPE.

3. PRIOR TO INSTALLING ANY CONCRETE, THE CONTRACTOR SHALL BE DILIGENT AND PROVIDE EXTRA COMMUNICATION WITH THE CONCRETE SUBCONTRACTORS. THE CONTRACTOR SHALL ALSO DOUBLE CHECK THE GRADES ON ALL FORMS OR STRING LINE PRIOR TO INSTALLING CONCRETE.

CONTRACTOR SHALL TAKE CARE AND MAKE ADJUSTMENTS SO THAT NO GRATES, VAULTS, ACCESS COVERS, OR APPURTENANCES ARE PLACED OR LOCATED WITHIN OR IN FRONT OF A CURB RAMP OR LANDING ULTIMATELY, IT IS THE CONTRACTORS RESPONSIBILITY TO MAKE SURE ALL CURB RETURNS AND CURB RAMPS MEET ADA REQUIREMENTS. RAMPS THAT DO NOT MEET THE REQUIREMENTS, WILL BE REPLACED AT THE CONTRACTORS

ADDITIONAL RESOURCES AND REFERENCES THAT EXPLAIN ADA REQUIREMENTS FOR THE CONTRACTOR: HTTPS://WWW.WSDOT.WA.GOV/

HTTP://WWW.BIKEWALK.ORG/PDF/SOPADA_FHWA.PDF HTTP://WWW.ACCESS-BOARD.GOV/PROWAC.DRAFT.PDF

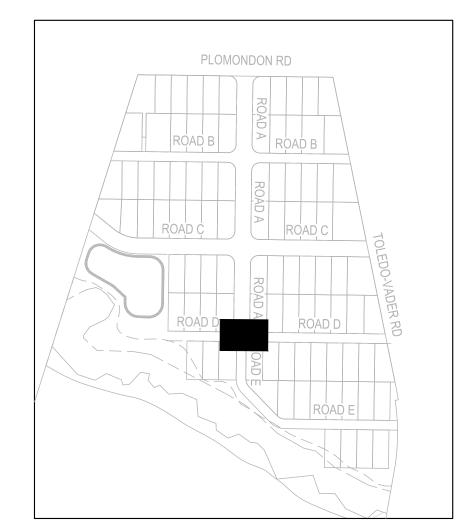
6. LANDINGS SHALL BE SLOPED BETWEEN 0.5% (MINIMUM) TO 2% (MAXIMUM) IN THE SAME FLOW DIRECTION AS

7. RAMPS MUST BE 12:1 (8.33%) OR FLATTER. THE RAMP SLOPE ON ONE SIDE SHALL VARY TO MATCH THE DIFFERENCE IN THE GUTTER LINE SLOPE AND LANDING SLOPE.

ADJACENT MOUNTABLE SIDEWALKS SHALL BE A MINIMUM OF 6" THICKNESS.

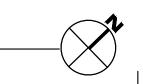
9. RAMPS AND ADJACENT SIDEWALKS AND DETECTABLE DOME DEVICES MUST BE TRAFFIC RATED FOR EMERGENCY VEHICLE HS-25 LOADING.

10. TRUNCATED DOMES SHALL BE PROVIDED PER THE CITY OF WINLOCK STANDARD DRAWING NUMBER 2-10 ON



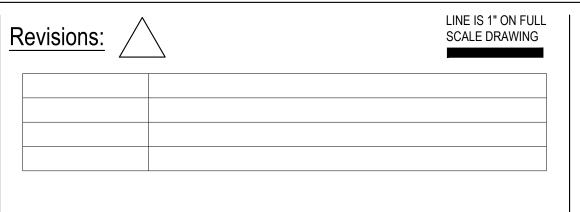
KEY MAP

Scale: 1" = 300' HORIZONTAL





CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.





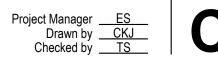
www.windsorengineers.com Project No: 21217 Copyright 2021 By Windsor Engineers, LLC

All Rights Reserved.



ENGINEERING SET Issue Date: 2022-10-x







PRECAST STRUCTURE NOTES

SEE COMPOSITE UTILITY, PLAN/PROFILE, AND DETAIL SHEETS FOR MORE INFORMATION.

MANHOLES ARE INDICATED BY THE FOLLOW TYPES: 1 - 48" ECCENTRIC CONE, OR 3 - 48" FLAT TOP (SHALLOW). INDICATED BY A (-1) OR (-3) IN THE STRUCTURE DESCRIPTION.

2' SUMP INCLUDED ON ALL CATCH BASIN MANHOLES; 1.5' MIN SUMP INCLUDED ON CATCH BASINS.

DROP STRUCTURES ARE INTENDED TO REDUCE FLOW VELOCITY AND DISSIPATE ENERGY. PLACE 1' OF CONCRETE INSIDE STRUCTURE FOR SCOUR PROTECTION. INSTALL PERFORATED BAFFLE ENERGY DISSIPATER PER MANUFACTURER'S RECOMMENDATIONS.

VANED GRATES REQUIRED FOR ALL GRATES OVER 6%. INDICATED BY A (V) IN THE STRUCTURE DESCRIPTION.

ALL VAULT, UTILITY BOX, INLET, MANHOLE AND CLEANOUT RIMS SHALL BE ADJUSTED TO FINISH GRADE UNLESS OTHERWISE NOTED.

STANDARD DETAIL STATEMENT
ALL MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR WATER, SEWER, STORM WATER
FACILITIES, AND EROSION CONTROL MEASURES, SHALL CONFORM TO CITY OF KALAMA DEVELOPMENT
GUIDELINES AND PUBLIC WORKS STANDARDS. CONSTRUCTION SHALL BE AS PER THE MOST CURRENT
STANDARD DETAIL CONTAINED THEREIN.

SSWR STRUCTURE TABLE			
STRUCTURE NAME	STRUCTURE DETAILS		
SA MH 400	RIM = 256.85 SUMP = 245.30 INV IN = 245.300		
SA MH 401	RIM = 261.13 SUMP = 252.60 INV IN = 252.600 INV IN = 252.600 INV OUT = 252.600		
SA MH 401A	RIM = 262.80 SUMP = 254.50 INV OUT = 254.500		
SA MH 402	RIM = 269.25 SUMP = 253.98 INV IN = 254.076 INV OUT = 253.976		
SA MH 403	RIM = 268.27 SUMP = 257.61 INV IN = 257.710 INV OUT = 257.610		
SA MH 404	RIM = 266.52 SUMP = 259.43 INV IN = 259.530 INV OUT = 259.430		
SA MH 405	RIM = 271.90 SUMP = 260.27 INV IN = 261.109 INV IN = 260.370 INV IN = 261.009 INV OUT = 260.270		
SA MH 406	RIM = 277.87 SUMP = 263.91 INV IN = 272.000 INV IN = 264.009 INV IN = 271.500 INV OUT = 263.909		
SA MH 407	RIM = 275.93 SUMP = 265.92 INV IN = 266.025 INV OUT = 265.925		
SA MH 408	RIM = 278.32 SUMP = 267.87 INV IN = 267.966 INV OUT = 267.866		
SA MH 409	RIM = 285.28 SUMP = 273.47 INV OUT = 273.466		
SA MH 410	RIM = 281.61 SUMP = 273.00 INV OUT = 273.000		
SA MH 411	RIM = 296.87 SUMP = 290.10 INV IN = 290.400 INV IN = 290.180 INV IN = 290.600 INV OUT = 290.100		
SA MH 412	RIM = 300.06 SUMP = 291.95 INV OUT = 291.950		
SA MH 413	RIM = 299.57 SUMP = 291.45 INV OUT = 291.450		
SA MH 414	RIM = 265.34 SUMP = 261.35 INV OUT = 261.349		
SA MH 415	RIM = 304.00 SUMP = 293.00 INV OUT = 293.000		
SA MH 416	RIM = 274.18 SUMP = 265.36 INV OUT = 265.356		

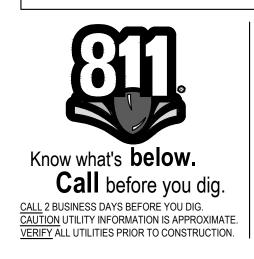
SSWR SSWR			
PIPE NAME	SIZE	LENGTH	SLOPE
PIPE 400-401	10	83.27	8.77%
PIPE 401-401A	10	31.74	5.99%
PIPE 401-402	8	68.79	2.00%
PIPE 402-403	8	353.37	1.00%
PIPE 403-404	8	172.08	1.00%
PIPE 404-405	8	147.91	0.50%
PIPE 405-406	8	280.00	1.00%
PIPE 405-414	8	195.82	0.50%
PIPE 405-416	8	434.65	1.00%
PIPE 406-407	8	191.54	1.00%
PIPE 406-410	8	375.86	0.40%
PIPE 406-411	8	280.00	6.46%
PIPE 407-408	8	184.15	1.00%
PIPE 408-409	8	110.00	5.00%
PIPE 411-412	8	346.86	0.51%
PIPE 411-413	8	308.00	0.28%
PIPE 411-415	8	260.00	1.00%

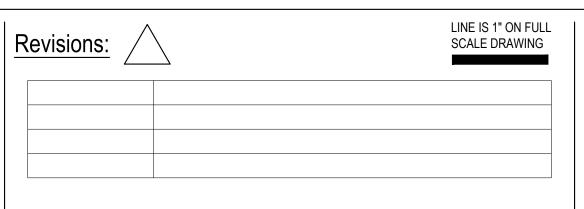
STORMWATER S	STORMWATER STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS		
FES 300	RIM = 262.19 SUMP = ??? INV IN = 261.000		
FES 316	RIM = 262.19 SUMP = ??? INV IN = 261.000		
ST CB 306A	RIM = 266.78 SUMP = 264.18 INV OUT = 264.179		
ST CB 308A	RIM = 268.44 SUMP = 265.84 INV OUT = 265.839		
ST CB 309A	RIM = 269.56 SUMP = 266.96 INV OUT = 266.957		
ST CB 315A	RIM = 272.88 SUMP = 270.28 INV OUT = 270.279		
ST CB 318	RIM = 275.57 SUMP = 271.15 INV IN = 271.150 INV IN = 271.150 INV OUT = 271.150		
ST CB 318A	RIM = 276.46 SUMP = 271.25 INV OUT = 271.250		
ST CB 318B	RIM = 275.29 SUMP = 271.25 INV OUT = 271.250		
ST CB 319A	RIM = 276.74 SUMP = 272.40 INV OUT = 272.400		
ST CB 325A	RIM = 279.46 SUMP = 275.05 INV OUT = 275.050		
ST MH 301	RIM = 266.87 SUMP = 261.04 INV IN = 261.037 INV OUT = 261.037		
ST MH 302	RIM = 265.25 SUMP = 261.31 INV IN = 261.309 INV OUT = 261.309		
ST MH 303	RIM = 272.09 SUMP = 261.75 INV IN = 268.150 INV IN = 261.752 INV OUT = 261.752		
ST MH 304	RIM = 270.95 SUMP = 261.86 INV IN = 261.862 INV OUT = 261.862		

STORMWATE	STORMWATER STRUCTURE TABLE		
STRUCTURE NAI	ME STRUCTURE DETAILS		
ST MH 305	RIM = 266.96 SUMP = 262.11 INV IN = 262.107 INV OUT = 262.107		
ST MH 306	RIM = 266.78 SUMP = 262.17 INV IN = 262.168 INV IN = 264.049 INV OUT = 262.168		
ST MH 307	RIM = 268.72 SUMP = 262.55 INV IN = 262.546 INV OUT = 262.546		
ST MH 308	RIM = 268.44 SUMP = 262.61 INV IN = 262.608 INV IN = 265.709 INV OUT = 262.608		
ST MH 309	RIM = 269.56 SUMP = 262.93 INV IN = 266.827 INV OUT = 262.928		
ST MH 310	RIM = 271.52 SUMP = 268.11 INV IN = 268.106 INV OUT = 268.200		
ST MH 311	RIM = 272.37 SUMP = 268.30 INV IN = 268.398 INV OUT = 268.298		
ST MH 312	RIM = 272.37 SUMP = 268.53 INV IN = 268.633 INV OUT = 268.533		
ST MH 313	RIM = 271.96 SUMP = 268.82 INV IN = 268.925 INV OUT = 268.825		
ST MH 314	RIM = 271.96 SUMP = 269.06 INV IN = 269.160 INV OUT = 269.060		
ST MH 315	RIM = 272.85 SUMP = 270.03 INV IN = 270.131 INV OUT = 270.031		
ST MH 317	RIM = 275.57 SUMP = 266.00 INV IN = 271.400 INV IN = 271.050 INV OUT = 266.000		
ST MH 319	RIM = 277.18 SUMP = 272.29 INV IN = 272.650 INV IN = 272.290 INV OUT = 272.290		
ST MH 320	RIM = 277.18 SUMP = 272.75 INV IN = 272.750 INV OUT = 272.750		
ST MH 321	RIM = 278.97 SUMP = 274.03 INV IN = 274.030 INV IN = 274.030 INV OUT = 274.030		

	STRUCTURE TABLE	
	STRUCTURE NAME	STRUCTURE DETAILS
	ST MH 322	RIM = 279.07 SUMP = 273.41 INV IN = 273.410 INV OUT = 273.410
	ST MH 323	RIM = 278.18 SUMP = 273.51 INV IN = 273.510 INV OUT = 273.510
	ST MH 324	RIM = 278.18 SUMP = 273.61 INV IN = 273.610 INV OUT = 273.610
	ST MH 325	RIM = 279.48 SUMP = 274.96 INV IN = 274.960 INV OUT = 274.960
	ST MH 326	RIM = 295.55 SUMP = 291.00 INV IN = 291.000 INV OUT = 291.000
	ST MH 327	RIM = 296.83 SUMP = 291.19 INV IN = 291.190 INV OUT = 291.190
	ST MH 328	RIM = 296.83 SUMP = 291.30 INV IN = 291.300 INV OUT = 291.300
	ST MH 329	RIM = 297.32 SUMP = 291.50 INV IN = 291.500 INV OUT = 291.500
	ST MH 330	RIM = 297.32 SUMP = 291.67 INV IN = 291.670 INV OUT = 291.670
	ST MH 331	RIM = 296.83 SUMP = 291.87 INV IN = 292.000 INV OUT = 291.870
	ST MH 331A	RIM = 296.81 SUMP = 292.14 INV OUT = 292.140
	ST MH 332	RIM = 264.94 SUMP = 261.00 INV OUT = 261.000
	ST MH 333	RIM = 220.50 SUMP = 216.00 INV IN = 216.000

STORMWATER STRM			
PIPE NAME	SIZE	LENGTH	SLOPE
PIPE - (300-301)	12	7.24	0.51%
PIPE - (301-302)	12	109.10	0.25%
PIPE - (302-303)	12	177.02	0.25%
PIPE - (303-304)	12	44.19	0.25%
PIPE - (303-310)	12	26.00	0.19%
PIPE - (304-305)	12	111.52	0.22%
PIPE - (305-306)	12	29.97	0.20%
PIPE - (306-306A)	12	26.00	0.50%
PIPE - (306-307)	12	148.73	0.25%
PIPE - (307-308)	12	30.22	0.20%
PIPE - (308-308A)	12	26.00	0.50%
PIPE - (308-309)	12	111.83	0.29%
PIPE - (309-309A)	12	26.00	0.50%
PIPE - (310-311)	12	40.97	0.47%
PIPE - (311-312)	12	26.00	0.52%
PIPE - (312-313)	12	41.05	0.47%
PIPE - (313-314)	12	26.00	0.52%
PIPE - (314-315)	12	173.07	0.50%
PIPE - (315-315A)	12	29.23	0.51%
PIPE - (316-317)	12	29.50	16.95%
PIPE - (317-318)	12	32.00	0.31%
PIPE - (317-319)	12	240.00	0.37%
PIPE - (318-318A)	12	39.96	0.25%
PIPE - (318-318B)	12	40.04	0.25%
PIPE - (319-319A)	12	50.25	0.22%
PIPE - (319-320)	12	32.00	0.31%
PIPE - (320-321)	12	48.08	2.66%
PIPE - (321-322)	12	32.00	-1.94%
PIPE - (321-326)	12	190.00	8.93%
PIPE - (322-323)	12	48.08	0.21%
PIPE - (323-324)	12	32.00	0.31%
PIPE - (324-325)	12	130.01	1.04%
PIPE - (325-325A)	12	33.08	0.27%
PIPE - (326-327)	12	39.62	0.48%
PIPE - (327-328)	12	26.00	0.42%
PIPE - (328-329)	12	41.00	0.49%
PIPE - (329-330)	12	32.00	0.53%
PIPE - (330-331)	12	41.01	0.49%
PIPE - (331-331A)	12	27.05	0.52%
PIPE - (332-333)	12	270.00	16.67%











COWLITZ MEADOWS
TOLEDO, WA

ENGINEERING SET

Issue Date: 2022-10-x

UTILITY STRUCTURE TABLES AND NOTES

Project Manager ES

Drawn by CKJ

Checked by TS