SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM

TOLT VILLAS
A MULTI-UNIT DEVELOPMENT
CARNATION, WA

RECEIVED
CITY OF CARNATION
10/10/2022

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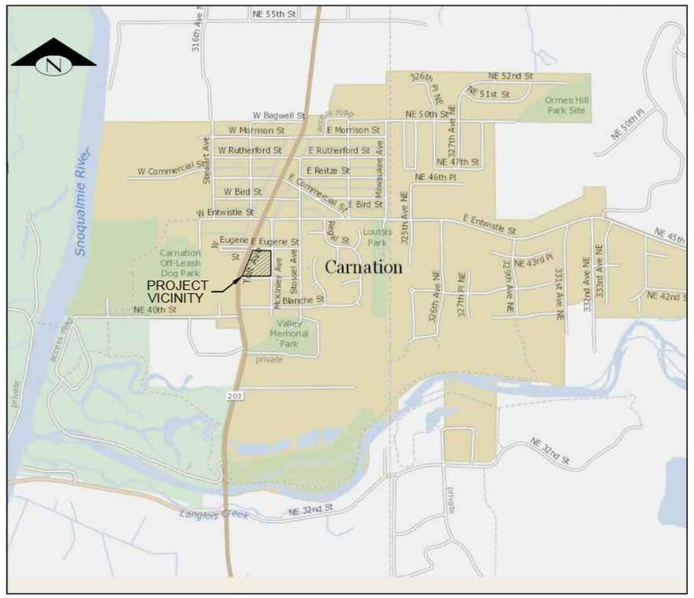
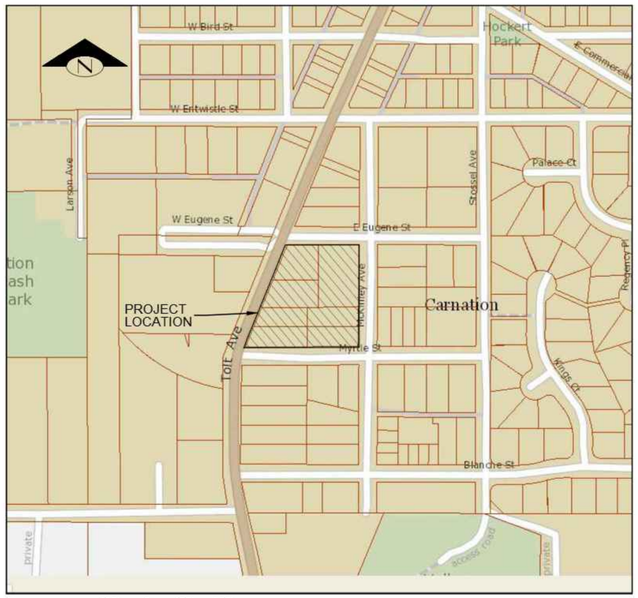


500' 0 500' 1,000'
SCALE IN FEET

CARNATION, WA
SCALE: AS SHOWN



125' 0 125' 250'
SCALE IN FEET

VICINITY MAP
SCALE: AS SHOWN

ABBREVIATIONS:

BOW	= BACK OF SIDEWALK
CB	= CATCH BASIN
CW	= CONCRETE WALK
EG	= EXISTING GRADE
EOP	= EDGE OF PAVEMENT
ESC	= EROSION & SEDIMENTATION CONTROL
EX	= EXISTING
FF	= FILTER FENCE
FG	= FINISH GRADE
FGTOEW	= FINISH GRADE AT TOE OF WALL
FGTOPW	= FINIS GRADE AT TOP OF WALL
FH	= FIRE HYDRANT
FM	= SAN. SEWER FORCE MAIN
FYSB	= FRONT YARD SETBACK
ROWSB	= RIGHT OF WAY SETBACK
RYSB	= REAR YARD SETBACK
SD	= STORM DRAIN
SDFM	= STORM DRAIN FORCE MAIN
SS	= SANITARY SEWER
SSCO	= SANITARY SEWER CLEANOUT
SSMH	= SANITARY SEWER MANHOLE
SSS	= SANITARY SIDE SEWER
SYSB	= SIDE YARD SETBACK
TOC	= TOP OF CURB
TOP	= TOP OF PAVEMENT
TYP	= TYPICAL
W	= WATER
WM	= WATER METER

BUILDING SETBACKS:

FRONT: 0'
SIDE: 5'
REAR: 20' (20% OF LOT, THE LESSOR)

CONTACT INFORMATION:

APPLICANT (CONTACT):
85 DEGREES, LLC
ATTN: TYLER WILCOX
3535 FACTORIA BLVD SE, SUITE 600
BELLEVUE, WA 98006
PH: 425.216.3443
EM: TYLER.WILCOX@PULTEGROUP.COM

CIVIL ENGINEER:
TIMOTHY W. GABELEIN, P.E.
DAVIDO CONSULTING GROUP, INC.
9706 4TH AVE NE, SUITE 300
SEATTLE, WA 98115
PH: 206.523.0024

LAND SURVEYOR:
DARREN J. RIDDLE, P.L.S.
PACIFIC COAST SURVEYS, INC.
P.O. BOX 13619
MILL CREEK, WA 98082
PH: 425.512.7099

PROJECT INFORMATION:

TAX PARCEL NO's:	8657300225, 8657300224, 8657300255, 8657300250, 8657300245, 8657300240, and 8657300226
SITE ADDRESS:	42XX TOLT AVENUE, CARNATION WA 98014
SITE AREA:	2.43 ACRES
STR:	SW1/4, SE1/4, SECTION 16, T25N, R7E, WM
ZONING:	MU (MIXED USE DISTRICT)
NUMBER OF UNITS:	43 UNITS PROPOSED
SEWER SERVICE:	CITY OF CARNATION
WATER SERVICE:	CITY OF CARNATION

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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P.O. Box 1132
Freeland, WA 98249
P. 360.331.4131
F. 360.331.5131
www.dcgengr.com

D|C|G civil structural

CALL 811
2 BUSINESS DAYS
BEFORE YOU DIG
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

TIMOTHY W. GABELEIN
STATE OF WASHINGTON
Digitally signed by Timothy Gabelein
Date: 2022.10.05 12:56:25 -07'00'
REGISTERED PROFESSIONAL ENGINEER

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
COVER SHEET

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET 1 OF 27	

SHEET NUMBER
C01

CAD FILE NUMBER: P:\CLIENTS\CIVIL\HYBRID ARCHITECTS\CARNATION\DEVELOPMENT\DWG\DRAWINGS\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

GENERAL PROJECT NOTES:

NO WORK REQUIRING CITY OF CARNATION APPROVAL AND/OR PERMITS, OR REQUIRING APPROVALS AND/OR PERMITS ISSUED BY OTHER GOVERNING AGENCIES, SHALL BE PERFORMED UNTIL SUCH APPROVALS/PERMITS HAVE BEEN ISSUED. COPIES OF ALL SUCH APPROVALS AND/OR PERMITS SHALL BE MAINTAINED ON SITE AT ALL TIMES WORK IS IN PROGRESS.

NO WORK OR SITE MOBILIZATION SHALL OCCUR UNTIL AFTER A PRE-CONSTRUCTION MEETING BETWEEN THE CITY AND THE PROPERTY OWNER, GEOTECHNICAL ENGINEER, GENERAL CONTRACTOR, AND EARTHWORK CONTRACTOR.

UNDERGROUND UTILITIES MAY BE SHOWN GRAPHICALLY IN THESE STANDARDS OR OTHER DOCUMENTS PROVIDED BY THE CITY. ANY REPRESENTATION OF UNDERGROUND UTILITIES IS FOR GENERAL INFORMATIONAL PURPOSES ONLY. THE OWNER OR THEIR AGENTS MAY NOT RELY UPON ANY REPRESENTATIVES OF THE LOCATION OR ABSENCE OF UNDERGROUND UTILITIES IN DOCUMENTS PROVIDED BY THE CITY.

THE OWNER AND CONTRACTOR MUST BE AWARE THAT EXCAVATING OR DIGGING FOR ANY REASON ON ANY PUBLIC PROPERTIES, PUBLIC RIGHTS-OF-WAY, OR PRIVATE PROPERTIES REQUIRES NOTIFICATION OF THE UTILITIES UNDERGROUND LOCATION CENTER AT 1-800-424-5555 OR 811 ON LOCAL PHONE NO LESS THAN 48 HOURS AND TWO BUSINESS DAYS PRIOR TO EXCAVATION.

THE OWNER AND THEIR CONTRACTOR ARE ADVISED OF THE POSSIBILITY OF ENCOUNTERING BURIED ARTIFACTS OR OTHER CULTURAL RESOURCES DURING THE CONSTRUCTION OF ANY IMPROVEMENTS THAT REQUIRE EXCAVATION. IN THE EVENT AN ARTIFACT OR OTHER POSSIBLE CULTURAL RESOURCE IS DISCOVERED DURING CONSTRUCTION, THE OWNER IS ADVISED TO CONTACT CITY HALL IMMEDIATELY. THE CITY WILL REFER THE OWNER TO THE APPROPRIATE GOVERNMENT AGENCY FOR ADDITIONAL INSTRUCTIONS.

THE CONTRACTOR AT ALL TIMES SHALL COMPLY WITH ALL FEDERAL AND STATE LAWS, LOCAL LAWS AND ORDINANCES, AND ANY REGULATIONS WHICH IN ANY MANNER AFFECT THE PROJECT. FAILURE TO COMPLY WITH THE LAWS AND CITY STANDARDS AND PERMIT CONDITIONS MAY RESULT IN DENIAL OF PLAN OR DEVELOPMENT PERMIT APPROVAL, REVOCATION OF PRIOR APPROVALS, LEGAL ACTION FOR FORFEITURE OF BOND, CODE ENFORCEMENT, AND/OR OTHER PENALTIES AS PROVIDED BY LAW.

THE CONTRACTOR SHALL RELEASE, INDEMNIFY AND PROMISE TO DEFEND AND SAVE HARMLESS THE CITY, ITS OFFICER, EMPLOYEES AND AGENTS FROM AND AGAINST ANY AND ALL LIABILITY, LOSS, DAMAGE, EXPENSE, ACTIONS AND CLAIMS, INCLUDING COST AND REASONABLE ATTORNEYS FEES INCURRED BY THE CITY IN DEFENSE THEREOF, ASSERTING OR ARISING DIRECTLY OR INDIRECTLY ON REGULATIONS WHETHER SUCH VIOLATIONS ARE BY THE CONTRACTOR, HIS/HER SUBCONTRACTORS, EMPLOYEES, OR AGENTS.

THE CONTRACTOR SHALL PROTECT AND PRESERVE FROM DAMAGE, INTERFERENCE AND DESTRUCTION ALL PRIVATE AND PUBLIC PROPERTY ON OR IN THE VICINITY OF THE WORK. IF SUCH PROPERTY IS DAMAGED OR DESTROYED OR ITS USE INTERFERED WITH BY THE CONTRACTOR OR HIS AGENTS, IT SHALL BE RESTORED IMMEDIATELY TO ITS FORMER CONDITION BY THE CONTRACTOR AT HIS EXPENSE AND SUCH INTERFERENCE TERMINATED.

WHENEVER CONSTRUCTION WORK UNDER THIS POLICY IS UNDERTAKEN ON EASEMENT, RIGHT-OF-WAY OR FRANCHISE, IT SHALL BE ACCOMPLISHED IN SUCH MANNER AS TO MINIMIZE DISTURBANCE AND DAMAGE.

THE CONTRACTOR SHALL NOT REMOVE, EVEN TEMPORARILY, ANY TREES OR SHRUBS WHICH EXIST ON EASEMENTS OR PARKING STRIPS ACROSS OTHER'S PRIVATE OR PUBLIC PROPERTY WITHOUT FIRST OBTAINING APPROVAL FROM THE AFFECTED PROPERTY OWNER AND THE CITY.

THE CONTRACTOR SHALL RESTORE ALL EASEMENTS AND RIGHTS-OF-WAY TO A CONDITION EQUAL TO THEIR ORIGINAL CONDITION BEFORE ENTRY, OR TO A CONDITION SATISFACTORY TO THE PROPERTY OWNER, AND/OR OTHER AUTHORITY, AND THE CITY.

THE CONTRACTOR SHALL PROTECT FROM DAMAGE PRIVATE AND PUBLIC UTILITIES, INCLUDING TELEPHONE LINES, GAS LINES, POWER LINES, STORM DRAINS, SEWER AND WATER LINES, AND APPURTENANCES, HIGHWAY LIGHTING AND SIGNAL SYSTEMS, AND SIMILAR FACILITIES.

THE OWNER IS RESPONSIBLE FOR ALL DAMAGES TO STREETS, ROADS, HIGHWAYS, DITCHES, WALLS, CULVERTS, UTILITIES, BARRICADES, LIGHTS, OR ANY OTHER PROPERTY CAUSED BY THE OWNER OR OWNER'S CONTRACTOR'S WORK, WHETHER SUCH DAMAGE BE AT THE SITE OF THE WORK OR CAUSED BY TRANSPORTING OR HAULING TO OR FROM THE WORK, AND SHALL REPAIR OR REPLACE, OR ARRANGE FOR THE REPAIR OF ALL SUCH DAMAGES TO THE SATISFACTION OF THE CITY AND OF ANY OTHER AUTHORITY OR PERSON HAVING OWNERSHIP OR JURISDICTION OVER THE PLACE OF WORK AND/OR DAMAGE.

THE OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR INTERIM TRAFFIC CONTROL DURING CONSTRUCTION ON OR ALONG TRAVELED ROADWAYS. TRAFFIC CONTROL SHALL FOLLOW THE GUIDELINES OF THE WSDOT STANDARD SPECIFICATIONS. ALL BARRICADES, SIGNS AND FLAGGING SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD MANUAL. SIGNS MUST BE LEGIBLE AND VISIBLE AND SHOULD BE REMOVED AT THE END OF EACH WORK DAY IF NOT APPLICABLE AFTER CONSTRUCTION HOURS.

WHEN ROAD CLOSURES CANNOT BE AVOIDED THE OWNER/CONTRACTOR SHALL POST "TO BE CLOSED" SIGNS PRIOR TO THE CLOSING THE ROAD. THE TYPES AND LOCATION OF THE SIGNS SHALL BE SHOWN ON A DETOUR PLAN. A DETOUR PLAN MUST BE PREPARED AND SUBMITTED TO THE CITY AND APPROVED PRIOR TO CLOSING ANY CITY STREET. IN ADDITION, THE OWNER/CONTRACTOR MUST NOTIFY, IN WRITING, LOCAL FIRE, SCHOOL, LAW ENFORCEMENT AUTHORITIES, ALL TRANSIT, POST OFFICE AND ANY OTHER AFFECTED PERSONS AS DIRECTED BY THE CITY AT LEAST FIVE DAYS PRIOR TO CLOSING UNLESS THE ROAD CLOSURE IS OF AN EMERGENCY NATURE.

NOISE FROM CONSTRUCTION ACTIVITIES SHALL NOT BE HEARD ACROSS PROPERTY LINES, OR PUBLIC RIGHTS-OF-WAY BOUNDARIES, EXCEPT DURING THE PERIODS 7:00 AM TO 7:00 PM MONDAYS THROUGH FRIDAYS OR 9:00 AM THROUGH 6:00 PM ON WEEKENDS AND HOLIDAYS.

TRUCKS TRAVELLING TO AND FROM THE WORK SITE SHALL DO SO BY THE MOST DIRECT ROUTE FROM THE SITE AND TOLT AVENUE (SR 203). TRUCKS SHALL NOT USE SIDE STREETS TO PARK, STAGE OR TRAVEL.

STREET AND SIDEWALK SURFACES SHALL BE CONTINUOUSLY MAINTAINED FREE OF DIRT, DUST, OR MUD. CONTRACTOR SHALL MECHANICALLY SWEEP STREET SURFACES DAILY, OR MORE FREQUENTLY AS REQUIRED, DURING PERIODS OF TRUCKING OPERATIONS OR AS OTHERWISE REQUIRED TO MAINTAIN CLEAN STREET SURFACES. STREET SURFACES SHALL NOT BE WASHED INTO DRAINAGE STRUCTURES OR STORM WATER DITCHES.

SANITARY FACILITIES, INCLUDING PORTABLE TOILET FACILITIES, FOR USE BY CONTRACTOR PERSONNEL, MATERIAL SUPPLIERS, AND GOVERNING AGENCY INSPECTORS SHALL BE FURNISHED BY THE CONTRACTOR AND REGULARLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

OWNER OR CONTRACTOR SHALL POST AND MAINTAIN SIGNAGE IDENTIFYING OWNER AND CONTRACTOR POINTS OF CONTACT INFORMATION FOR KEY PERSONNEL. SIGN SHALL BE NEAR THE ROW BOUNDARY AND CLEARLY VISIBLE. POINT OF CONTACT INFORMATION SHALL INCLUDE NAMES AND PHONE NUMBERS OF PERSONS IN AUTHORITY. AT LEAST ONE PHONE NUMBER POSTED SHALL OPERATE 24 HOURS/DAY AND 7 DAYS A WEEK.

PROTECT EXISTING SURVEY MONUMENTS, INCLUDING PROPERTY CORNERS, FROM DISTURBANCE OR DAMAGE BY CONSTRUCTION ACTIVITIES. ALL EXISTING SURVEY MONUMENTS, INCLUDING PROPERTY CORNERS, SHALL BE PERPETUATED BY LICENSED SURVEYOR IN ACCORDANCE WITH WAC 332-120 AND REQUIRED MONUMENT DESTRUCTION REPORTS FILED WITH THE DEPARTMENT OF NATURAL RESOURCES.

CONTRACTOR SHALL MAINTAIN, ON A DAILY BASIS, RECORD DRAWINGS SHOWING ALL DEVIATIONS FROM THE APPROVED PERMIT DRAWINGS. PRIOR TO FINAL APPROVAL, THE DEVELOPER SHALL SUBMIT AUTOCAD RECORD DRAWINGS, TO THE CITY ENGINEER, IN A FORMAT ACCEPTABLE TO THE CITY.

PUBLIC RIGHTS OF WAY CONSTRUCTION STANDARDS:

ALL WORK IN PUBLIC RIGHTS-OF-WAY (ROW) AND ROW DEDICATION AREAS SHALL COMPLY WITH THE 2021 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (WSDOT STD SPECS), EXCEPT AS MODIFIED BY THE CITY OF CARNATION STREET AND STORM SEWER SYSTEM STANDARDS, THE CONDITIONS ANNOTATED ON THE APPROVED PERMIT DRAWINGS, AND THE FOLLOWING CONDITIONS. CONFLICTING STANDARDS SHALL BE RESOLVED BY THE CITY ENGINEER.

COORDINATION WITH CITY:

CITY ENGINEER REPRESENTATIVE: JORGE GARCIA, P.E., HNTB, (PH) 206 200-3417;
E-MAIL: JORGARCIA@HNTB.COM

PUBLIC WORKS SUPERINTENDENT: BILL FERRY, CARNATION CITY HALL, (PH) 425-333-4192

CITY ENGINEER REPRESENTATIVE MUST OBSERVE AND ACCEPT ALL WORK IN ROW, EXCEPT WATER AND SEWER INSTALLATIONS. COORDINATE WATER AND SEWER INSTALLATION OBSERVATION WITH THE PUBLIC WORKS SUPERINTENDENT.

SCHEDULE FOR WORK IN ROW SHALL BE UPDATED WEEKLY BY CONTRACTOR AND A COPY PROVIDED TO CITY ENGINEER REPRESENTATIVE ON A WEEKLY BASIS. CONTRACTOR SHALL COORDINATE CLOSELY WITH CITY ENGINEER REPRESENTATIVE TO KEEP CITY ENGINEER REPRESENTATIVE APPRISED OF WORK PROGRESS/STATUS.

CONTRACTOR SHALL NOT BURY PIPE OR STRUCTURES IN ROW UNTIL OBSERVED BY CITY ENGINEER REPRESENTATIVE OR PUBLIC WORKS REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND SCHEDULING SITE OBSERVATION BY CITY REPRESENTATIVE.

UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL COORDINATE DIRECTLY WITH CITY ENGINEER REPRESENTATIVE FOR CONSTRUCTION OBSERVATION OF ALL WORK WITHIN THE ROW, EXCEPT WATER AND SEWER.

TEMPORARY TRAFFIC CONTROL:

CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SELECTING AND IMPLEMENTING PROPER TEMPORARY TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH APPLICABLE REGULATIONS AND INDUSTRY STANDARD PRACTICES.

TEMPORARY TRAFFIC CONTROL SHALL BE PROVIDED AT ANY TIME WORK IN ROW MAY INTERFERE WITH NORMAL AND SAFE FLOW OF VEHICULAR AND PEDESTRIAN TRAFFIC. ALL FLAGGERS SHALL HOLD CURRENT CERTIFICATION BY STATE OF WASHINGTON. A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE MAINTAINED ON ALL STREETS AT ALL TIMES, EXCEPT WHEN CITY HAS APPROVED A DETOUR.

ALL TRAFFIC CONTROL SIGNAGE SHALL COMPLY WITH THE LATEST VERSION OF THE WSDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

ROAD CLOSURE/DETOUR:

ROAD CLOSURE/TRAFFIC DETOURS ARE NOT AUTHORIZED FOR THIS PROJECT. A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE OPEN TO VEHICLES AT ALL TIMES.

TRENCH SAFETY:

CONTRACTOR SHALL SELECT, DESIGN, FURNISH AND PLACE TRENCH SAFETY SYSTEMS TO PROTECT WORKERS IN ACCORDANCE WITH WISHA, CH 49.17 RCW. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, DESIGN, AND INSTALLATION OF APPROPRIATE TRENCH SAFETY MEASURES.

RESTRICTIONS:

WORK HOURS SHALL BE LIMITED TO 7:00 AM TO 7:00 PM, WEEKDAYS (M-F) AND 9:00 AM - 6:00 PM WEEKENDS AND HOLIDAYS.

WORK REQUIRING OBSERVATION BY CITY STAFF OR CITY ENGINEER SHALL BE RESTRICTED TO WEEKDAYS (M-F), EXCLUDING HOLIDAYS RECOGNIZED BY CITY OF CARNATION, EXCEPT AS OTHERWISE AUTHORIZED BY THE CITY ENGINEER.

NO PAVEMENT OR ASSOCIATED BASE COURSE OR SUBGRADE WORK SHALL BE PERFORMED BETWEEN OCTOBER 1ST AND MARCH 31ST WITHOUT CITY ENGINEER APPROVAL

BURIED UTILITIES:

BURIED UTILITIES SHALL BE LOCATED PRIOR TO START OF EXCAVATION IN ROW. POTENTIAL UTILITY CROSSINGS SHALL BE POTHOLED PRIOR TO EXCAVATION FOR NEW STORM, WATER AND UTILITIES. CONTRACTOR SHALL NOTIFY CARNATION PUBLIC WORKS DIRECTOR AND AFFECTED UTILITY PROVIDER OF ANY UTILITY CONFLICTS. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER FOR RELOCATION OF UTILITIES AND PERFORM WORK NECESSARY TO RELOCATE UTILITIES, AS REQUIRED.

MATERIALS:

BEFORE INSTALLATION, ALL MATERIALS USED WITHIN THE PUBLIC ROW SHALL BE ACCEPTED BY THE CITY ENGINEER. MATERIAL SUBMITTALS FOR ALL MATERIALS USED IN THE ROW SHALL BE PROVIDED TO THE CITY ENGINEER FOR REVIEW AND ACCEPTANCE.

SUBMITTALS:

MATERIAL SUBMITTALS SHALL BE FORWARDED TO THE CITY ENGINEER FOR REVIEW AND ACCEPTANCE.

MAINTAIN AT LEAST ONE COPY ON SITE OF ALL MATERIAL SUBMITTALS ACCEPTED BY CITY ENGINEER.

SUBMIT PORTLAND CEMENT CONCRETE MIX DESIGNS AND ASPHALT CONCRETE AND ASPHALT TREATED BASE (ATB) MIX DESIGNS, FOR CITY APPROVAL, BEFORE INSTALLATION. ATB AND ASPHALT MIX DESIGNS SHALL BE WSDOT APPROVED MIX DESIGNS.

SUBMIT PLAN FOR PROTECTING INFILTRATION DRAINAGE SYSTEM FROM CONTAMINATION BY CONSTRUCTION STORMWATER RUNOFF.

WITHIN 2 WORK DAYS OF DELIVERY, SUBMIT ONE COPY OF EVERY CONCRETE, ASPHALT AND ATB DELIVERY TRUCK TICKETS, TO CITY ENGINEER, FOR ALL CONCRETE, ASPHALT AND ATB INSTALLED WITHIN THE ROW. DELIVERY TICKETS SHALL INDICATE CLASS OF CONCRETE OR ASPHALT DELIVERED AND THE DATE AND SOURCE.

WITHIN 2 WORK DAYS OF TEST, SUBMIT ONE COPY OF EACH COMPACTION TEST OR LABORATORY TEST PERFORMED FOR WORK IN ROW, TO CITY ENGINEER. WITHIN 3 WORKING DAYS OF SITE VISIT, SUBMIT ONE COPY OF EACH OF THE GEOTECHNICAL ENGINEER'S FIELD REPORTS FOR WORK IN ROW, TO CITY ENGINEER.

CONSTRUCTION REQUIREMENTS:

CITY OF CARNATION PUBLIC WORKS DIRECTOR OR CITY ENGINEER SHALL APPROVE ALL WORK PERFORMED IN ROW.

- SUBGRADE FOR PAVEMENT AND SIDEWALKS SHALL BE PREPARED IN ACCORDANCE WITH WSDOT STD SPECS SECTIONS 2-03 AND 2-06.
- GRAVEL BASE FOR PAVEMENT AND SIDEWALKS SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 4-04.
- ASPHALT TREATED BASE (ATB) SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 4-06.
- ASPHALT PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 5-04.
- STORM DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTIONS 7-04, 7-05, AND 7-08.
- CURBS AND GUTTERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-04. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-14.
- PERMANENT SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-21.
- PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-22.

PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE, TEST, AND APPROVE SUBGRADE BELOW ALL STREET WIDENING BEFORE AGGREGATE BASE AND ATB ARE INSTALLED AND SHALL PROVIDE WRITTEN ACCEPTANCE TO CITY. PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE, TEST, AND APPROVE TRENCH BACKFILL AND CRUSHED SURFACING TOP COURSE (CSTC) ROAD BASE BEFORE STREET ASPHALT IS INSTALLED AND SHALL PROVIDE WRITTEN ACCEPTANCE TO CITY. COMPACTION TESTING FOR SUBGRADE AND GRAVEL BASE SHALL COMPLY WITH WSDOT STD SPECS SECTION 2-03.3(14)D. COMPACTION TESTING SHALL BE PERFORMED FOR EVERY 400 SQUARE FEET OF SUBGRADE AND GRAVEL BASE, PER LIFT, EXCEPT MORE FREQUENT TESTING SHALL BE PERFORMED AS DIRECTED BY CITY ENGINEER OR GEOTECHNICAL ENGINEER BASED ON OBSERVABLE SOIL CONDITIONS OR FAILED TESTS. HABITAT FOR HUMANITY SHALL PROVIDE FOR IN-PLACE COMPACTION TESTING AND A COPY OF ALL TEST RESULTS SHALL BE PROVIDED TO CITY ENGINEER. CONTRACTOR SHALL PROOF ROLE ANY AND ALL LOCATIONS DESIGNATED BY PROJECT GEOTECHNICAL ENGINEER OR CITY ENGINEER REPRESENTATIVE.

CURB/GUTTER/SIDEWALK GRADES, STREET BASE AND SURFACE GRADES, AND PIPE GRADES SHALL BE MAINTAINED BY USE OF A LASER.

TRENCH AND EXCAVATION BACKFILL, PIPE AND DRAINAGE STRUCTURE BEDDING, AND ROAD BASE SHALL BE CRUSHED SURFACING TOP COURSE (CSTC) AND/OR BASE COURSE PER 2012 WSDOT STD SPEC SECTION 9-03.9(3). ASPHALT PAVEMENT SHALL BE CLASS 1/2" PG 64-22; ALL MEET LINES SHALL BE TACKED AND SEALED. TACK COAT SHALL BE CSS-1, EMULSIFIED ASPHALT. ATB SHALL BE PLACED AND COMPACTED IN MAXIMUM 3-INCH THICK LIFTS. HOT MIX ASPHALT (HMA) SHALL BE PLACED AND COMPACTED IN MAXIMUM 2-INCH THICK LIFTS. ALL HMA PATCHES AND HMA SURFACES SHALL BE COMPACTED BY ROLLING FLAT AND SLOPED TO SURFACE DRAIN WITHOUT PUDDLES OR PONDING. ALL VALVE BOXES, GRATES, COVERS, VALVE PITS AND SURFACE UTILITY FEATURES SHALL BE ADJUSTED TO MATCH ASPHALT FINISH GRADE. ATB SHALL NOT BE PLACED UNTIL ALL BURIED UTILITIES HAVE BEEN INSTALLED BENEATH IT.

FINISH GRADE INFORMATION SHOWN ON DRAWINGS MAY BE INCOMPLETE OR INSUFFICIENT FOR CONSTRUCTION OF CONCRETE CURB/GUTTER AND ASPHALT STREET SURFACES. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING MISSING INFORMATION AND FOR RESOLVING INCONSISTENCIES SO THAT STREET ASPHALT AND GUTTER SURFACES RESULT IN SURFACE RUNOFF TO CONCRETE GUTTERS, ASPHALT THICKENED EDGES, AND STORM CATCH BASINS - NO PUDDLING/PONDING SHALL RESULT. NEW STREET ASPHALT AND/OR CONCRETE GUTTERS SHALL BE RE-GRADED AS REQUIRED TO ELIMINATE PUDDLES/PONDING.

SIDEWALKS IN ROW SHALL BE 3,000 PSI PORTLAND CEMENT CONCRETE, WITH FULL DEPTH EXPANSION JOINTS AT MAXIMUM 15 FEET ON CENTER. APPLY CURING COMPOUND. SIDEWALK AGGREGATE BASE SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY (MDD) PER ASTM D1557 (MODIFIED PROCTOR). CITY ENGINEER SHALL OBSERVE AND ACCEPT SUBGRADE AND AGGREGATE BASE COURSE BEFORE PLACEMENT OF CONCRETE. SIDEWALKS SHALL DRAIN TO SIDES - NO PUDDLES. SIDEWALK REPLACEMENT WORK SHALL BE PLANNED, SEQUENCED, AND PERFORMED IN SUCH MANNER AS TOO MINIMIZE AMOUNT OF TIME, BETWEEN SIDEWALK DEMOLITION AND SIDEWALK REPLACEMENT, TO LEAST AMOUNT NECESSARY TO PERFORM THE WORK. DURING SIDEWALK REPLACEMENT, INSTALL SIGNS AT EACH END NOTIFYING PUBLIC THAT SIDEWALK IS TEMPORARILY CLOSED. PROTECT CONCRETE SURFACES FROM DAMAGE - CRACKED CONCRETE WORK SHALL BE REPLACED.

PVC PIPE CONNECTIONS TO CONCRETE STRUCTURES SHALL HAVE SAND COLLARS OR APPROVED EQUAL MEANS OF CONNECTION.

TEMPORARY EROSION AND SEDIMENTATION CONTROL:

PREVENT SILT-LADEN (TURBID) RUNOFF FROM REACHING PUBLIC STORM DRAINS OR NEW INFILTRATION TRENCH. INFILTRATION TRENCH SHALL NOT BE USED AS A SEDIMENTATION FACILITY. PLUG INLET TO STORMFILTER STRUCTURE UNTIL ALL DRAINAGE BASIN SOILS ARE FINALLY STABILIZED AND STORMFILTER IS INSTALLED AND OPERATIONAL. DO NOT REMOVE PLUG UNTIL APPROVED BY CITY ENGINEER. COVER STORM DRAINS WITH STORM INLET PROTECTION CONFORMING TO WSDOT STD PLAN I-40.20-00, INSPECT DAILY, AND CLEAN INLETS TO PREVENT BYPASS OR OVERTOPPING.

STREETS AND SIDEWALKS SHALL BE KEPT FREE OF DUST, DIRT AND MUD AND STREET SHALL BE MECHANICALLY SWEPT DAILY OR AS OTHERWISE NEEDED.

BLOWING DUST SHALL BE PREVENTED. IF REQUIRED, A TANKER WATERING TRUCK SHALL BE UTILIZED TO KEEP DUST FROM FORMING.

SURVEY CONTROL:

SURVEY CONTROL AND LAYOUT STAKING SHALL BE PERFORMED BY LICENSED SURVEYOR AND SHALL CONFORM WITH APPROVED DRAWINGS. AS-BUILT LOCATIONS AND ELEVATIONS SHALL BE SURVEYED AND INCORPORATED INTO CONSTRUCTION AS-BUILT DRAWINGS PROVIDED TO THE CITY. STATIONING SHALL BE FIELD MARKED ON PAVEMENT AND MAINTAINED THROUGHOUT CONSTRUCTION.

RECORD DRAWINGS:

PROVIDE AS-BUILT DRAWINGS SHOWING LOCATION AND CONFIGURATION OF STREET AND PEDESTRIAN IMPROVEMENTS, UTILITIES, SIGNAGE AND TRAFFIC CONTROL.

CLEANLINESS:

ALL ROW WORK AREAS SHALL BE KEPT CLEAR OF DEBRIS ON A DAILY BASIS.

ALL STORM DRAIN STRUCTURES SHALL BE CLEANED BY VACTOR TRUCK, OR OTHER METHOD APPROVED BY CITY ENGINEER, BEFORE FINAL ACCEPTANCE.

GENERAL UTILITY PIPE TRENCHING AND TRENCH PATCHING NOTES:

TRENCHES SHALL BE EXCAVATED TO THE LINE AND DEPTH DESIGNATED BY THE PLANS TO PROVIDE THE COVER OVER THE WATER SYSTEM, SANITARY SEWER SYSTEM, OR STORM WATER SYSTEM AS SPECIFIED BY THE CITY. EXCEPT FOR UNUSUAL CIRCUMSTANCES WHERE APPROVED BY THE CITY, THE TRENCH SIDES SHALL BE EXCAVATED VERTICALLY AND THE TRENCH WIDTH SHALL BE EXCAVATED ONLY TO SUCH WIDTHS AS ARE NECESSARY FOR ADEQUATE WORKING SPACE AS ALLOWED BY THE GOVERNING AGENCY. THE TRENCH SHALL BE KEPT FREE FROM WATER UNTIL PIPE JOINING IS COMPLETE. SURFACE WATER SHALL BE DIVERTED SO AS NOT TO ENTER THE TRENCH. THE CONTRACTOR SHALL MAINTAIN SUFFICIENT PUMPING EQUIPMENT ON THE JOB TO ENSURE THAT THESE PROVISIONS ARE CARRIED OUT.

THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND WHATEVER SUBSTANCE ENCOUNTERED AND BOULDERS, ROCKS, ROOTS, AND OTHER OBSTRUCTIONS SHALL BE ENTIRELY REMOVED OR CUT OUT TO THE WIDTHS OF THE TRENCH AND TO A DEPTH 6 INCHES BELOW UTILITY PIPE GRADE. WHERE MATERIALS ARE REMOVED FROM BELOW UTILITY PIPE GRADE, THE TRENCH SHALL BE BACKFILLED TO GRADE WITH FOUNDATION GRAVEL AND THOROUGHLY COMPACTED.

TRENCHING AND SHORING OPERATIONS SHALL NOT PROCEED MORE THAN 100 FEET IN ADVANCE OF PIPE LAYING WITHOUT APPROVAL OF THE CITY, AND SHALL BE IN CONFORMANCE WITH WASHINGTON INDUSTRIAL SAFETY AND HEALTH ADMINISTRATION (WISHA) AND OFFICE OF SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY STANDARD.

MATERIAL EXCAVATED FROM TRENCHES AND PILED ADJACENT TO THE TRENCH, OR IN A ROADWAY OR PUBLIC THOROUGHFARE, SHALL BE PILED AND MAINTAINED SO THAT THE TOE OF THE SLOPE OF THE MATERIAL IS AT LEAST 3 FEET FROM THE EDGE OF THE TRENCH. IT SHALL BE PILED IN SUCH A MANNER AS WILL CAUSE A MINIMUM OF INCONVENIENCE TO PUBLIC TRAVEL, AND PROVISIONS SHALL BE MADE FOR TRAFFIC CONTROL AS NECESSARY. FREE ACCESS SHALL BE PROVIDED TO FIRE HYDRANTS, WATER VALVES, AND METERS, AND CLEARANCE SHALL BE LEFT TO ENABLE FREE FLOW OF STORM WATER IN GUTTERS, OTHER CONDUITS, AND NATURAL WATERCOURSES.

OPEN-CUT TRANSVERSE CROSSINGS OF ROADWAYS AFTER FINAL PAVING ARE NOT TO BE PERMITTED UNLESS IT CAN BE SHOWN THAT ALTERNATIVES SUCH AS JACKING, AUGURING OR TUNNELING ARE NOT FEASIBLE OR UNLESS THE UTILITY CAN BE INSTALLED JUST PRIOR TO RECONSTRUCTION OR AN OVERLAY OF THE ROAD. SHOULD AN OPEN CUT BE APPROVED, ALL TRANSVERSE TRENCHES SHALL BE BACKFILLED WITH CRUSHED SURFACING OR CONTROLLED DENSITY FILL.

TRENCHES SHALL BE EXCAVATED TO THE LINE AND DEPTH DESIGNATED BY THE PLANS TO PROVIDE THE COVER OVER THE WATER SYSTEM, SANITARY SEWER SYSTEM, OR STORM WATER SYSTEM AS SPECIFIED BY THE CITY. EXCEPT FOR UNUSUAL CIRCUMSTANCES WHERE APPROVED BY THE CITY, THE TRENCH SIDES SHALL BE EXCAVATED VERTICALLY AND THE TRENCH WIDTH SHALL BE EXCAVATED ONLY TO SUCH WIDTHS AS ARE NECESSARY FOR ADEQUATE WORKING SPACE AS ALLOWED BY THE GOVERNING AGENCY. THE TRENCH SHALL BE KEPT FREE FROM WATER UNTIL PIPE JOINING IS COMPLETE. SURFACE WATER SHALL BE DIVERTED SO AS NOT TO ENTER THE TRENCH. THE CONTRACTOR SHALL MAINTAIN SUFFICIENT PUMPING EQUIPMENT ON THE JOB TO ENSURE THAT THESE PROVISIONS ARE CARRIED OUT.

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WHERE TRENCH EXCAVATION EQUALS OR EXCEEDS A DEPTH OF 4 FEET, THE DEVELOPER/CONTRACTOR SHALL PROVIDE, CONSTRUCT, MAINTAIN AND REMOVE, AS REQUIRED, SAFETY SYSTEMS THAT MEET THE REQUIREMENTS OF THE WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT, RCW 49.17, INCLUDING WAC 296-155. THE TRENCH SAFETY SYSTEMS SHALL BE DESIGNED BY A QUALIFIED PERSON, AND MEET ACCEPTED ENGINEERING REQUIREMENTS (SEE WAC 296-155-660).

THE CONTRACTOR SHALL ADEQUATELY SHORE TRENCHES TO PROTECT THE WORK, EXISTING PROPERTY, UTILITIES, PAVEMENT, ETC., AND TO PROVIDE SAFE WORKING CONDITIONS IN THE TRENCH. THE METHOD OF SHORING SHALL BE ACCORDING TO THE CONTRACTOR'S DESIGN. THE CONTRACTOR MAY ELECT TO USE A COMBINATION OF SHORING OR OVER BREAK, TUNNELING, BORING, SLIDING TRENCH SHIELDS, OR OTHER METHODS OF ACCOMPLISHING THE WORK, PROVIDED THE METHOD MEETS ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES. DAMAGES RESULTING FROM IMPROPER SHORING OR FROM FAILURE TO SHORE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REMOVAL OF ANY SHORING FROM THE TRENCH SHALL BE ACCOMPLISHED IN SUCH A MANNER AS TO ASSURE THAT NO DAMAGE IS DONE TO THE PIPE OR WORK.

WHERE WATER IS ENCOUNTERED IN THE TRENCH, IT SHALL BE REMOVED DURING PIPE-LAYING OPERATIONS AND THE TRENCH SO MAINTAINED UNTIL THE ENDS OF THE PIPE ARE SEALED AND PROVISIONS ARE MADE TO PREVENT FLOATING OF THE PIPE. TRENCH WATER OR OTHER DELETERIOUS MATERIALS SHALL NOT BE ALLOWED TO ENTER THE PIPE AT ANY TIME.

THE DEVELOPER/CONTRACTOR SHALL FURNISH, INSTALL, AND OPERATE ALL NECESSARY EQUIPMENT TO KEEP THE TRENCH ABOVE THE FOUNDATION LEVEL FREE FROM WATER DURING CONSTRUCTION, AND SHALL DEWATER AND DISPOSE OF THE WATER SO AS NOT TO CAUSE INJURY TO PUBLIC OR PRIVATE PROPERTY OR NUISANCE TO THE PUBLIC. SUFFICIENT PUMPING EQUIPMENT IN GOOD WORKING CONDITION SHALL BE AVAILABLE AT ALL TIMES FOR ALL EMERGENCIES, INCLUDING POWER OUTAGE, AND SHALL HAVE AVAILABLE AT ALL TIMES COMPETENT WORKERS FOR THE OPERATION OF THE PUMPING EQUIPMENT.

WHEN NATIVE MATERIAL AT THE TRENCH BOTTOM IS STONY OR OTHERWISE NON-UNIFORM, THE TRENCH SHALL BE OVER-EXCAVATED A MINIMUM OF 6 INCHES BELOW THE SPECIFIED GRADE AND A LAYER OF PIPE BEDDING MATERIAL SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR TO THE SPECIFIED GRADE. AFTER THE PIPE IS IN PLACE ADDITIONAL HAND SELECTED NATIVE MATERIAL MEETING THE REQUIREMENTS FOR BEDDING MATERIAL SHALL BE PLACED AND TAMPED AROUND THE PIPE FOR A MINIMUM OF 6 INCHES ABOVE THE CROWN OF THE PIPE.

IF THE NATIVE MATERIAL AT THE TRENCH BOTTOM IS UNSUITABLE FOR FOUNDATION PURPOSES OR WILL HAVE DIFFICULTY PROVIDING UNIFORM BEARING FOR THE PIPE, SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH A MINIMUM OF 6 INCHES OF COMPACTED FOUNDATION MATERIAL.

BEDDING MATERIAL SHALL BE AS SPECIFIED ON THE APPROVED DRAWINGS OR NOTES. THE BEDDING MATERIAL SHALL BE CARRIED UP EVENLY ON BOTH SIDES OF THE PIPE SIMULTANEOUSLY IN APPROXIMATELY 6-INCH LAYERS AND EACH LAYER THOROUGHLY COMPACTED WITH APPROPRIATE TOOLS IN SUCH MANNER AS TO AVOID INJURING OR DISTURBING THE COMPLETED PIPELINE. ALL BEDDING AND NATIVE MATERIAL SHALL BE STORED AWAY FROM THE EDGES OF EXCAVATION AND OFF THE PAVED ROADWAY AND SHOULDER.

ALL TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED TO 95% OF MAXIMUM DENSITY (ASTM D 1557 MODIFIED PROCTOR TEST) WITHIN THE RIGHT-OF-WAY AND IN ALL AREAS (PAVED AND UNPAVED) WHERE STREETS, ROADWAY SHOULDERS, DRIVEWAYS, SIDEWALKS, OR PARKING LOTS WILL BE CONSTRUCTED OR RECONSTRUCTED OVER THE TRENCH EXCEPT FOR TRENCHES OVER 8 FEET IN DEPTH. WHEN THE TRENCH DEPTH EXCEEDS 8 FEET, TRENCH BACKFILL UP TO 4 FEET FROM THE TOP OF THE TRENCH MAY BE WATER SETTLED OR MECHANICALLY COMPACTED TO 90% OF THE MAXIMUM DENSITY. THE UPPER 4 FEET SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY.

BACKFILL SHALL BEGIN IMMEDIATELY AFTER INSPECTION AND APPROVAL OF THE INSTALLATION BY THE CITY. BACKFILL COMPACTION ON PRIVATE PROPERTY IS THE OWNER'S RESPONSIBILITY.

THE BOTTOM OF THE TRENCH SHALL BE FINISHED TO GRADE WITH HAND TOOLS IN SUCH A MANNER THAT THE PIPE WILL HAVE BEARING ALONG THE ENTIRE LENGTH OF THE BARREL. THE BELL HOLES SHALL BE EXCAVATED WITH HAND TOOLS TO SUFFICIENT SIZE TO MAKE UP THE JOINT.

SUITABLE NATIVE MATERIAL EXCAVATED DURING TRENCHING MAY BE USED FOR TRENCH BACKFILL OUTSIDE OF SIDEWALK AND PAVEMENT AREAS UNLESS NOTIFIED BY THE CITY THAT THE NATIVE MATERIAL IS UNSUITABLE. THE CITY OR REPRESENTATIVE WILL EXAMINE EXCAVATED NATIVE MATERIAL AT THE TIME OF EXCAVATION TO DETERMINE ITS SUITABILITY FOR USE AS BACKFILL. NATIVE MATERIAL WILL BE CONSIDERED SUITABLE FOR TRENCH BACKFILL IF IT IS:

(SEE SHEET C03 FOR NOTES CONTINUATION)

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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DCG civil structural

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(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

TIMOTHY W. GABELEIN
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
Digitally signed Tim Gabelein
Date: 2022.10.06 12:57:10 -07'00'

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
GENERAL NOTES

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 — SHEET 2 OF 27

SHEET NUMBER
C02

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

GENERAL UTILITY PIPE TRENCHING AND TRENCH PATCHING NOTES (CONTINUED):

CAPABLE OF ATTAINING THE DEGREE OF COMPACTION SPECIFIED WITHIN REASONABLE TOLERANCE OF OPTIMUM MOISTURE CONTENT.

REASONABLY FREE OF ORGANIC MATERIAL, CLAY, FROZEN LUMPS, ROCKS GREATER THAN 2 INCHES, OR OTHER DELETERIOUS MATTER.

UNSUITABLE BACKFILL MATERIAL SHALL BE REMOVED FROM THE SITE AND HAULED TO AN APPROVED DISPOSAL SITE. THE CITY SHALL BE PROVIDED WITH THE LOCATION OF ALL DISPOSAL SITES TO BE USED AND ALSO COPIES OF THE PERMITS AND APPROVALS FOR SUCH DISPOSAL SITES. PERPENDICULAR OPEN CUT CROSSINGS OF ANY PUBLIC RIGHT OF WAY SHALL REQUIRE CONTROLLED DENSITY FILL (CDF) OR 100% IMPORT OF CRUSHED SURFACING BASE AND TOP COURSE UNLESS WAIVED BY THE CITY.

UNDER SIDEWALK OR PAVEMENT AREAS, IMPORTED MATERIAL SHALL MEET THE REQUIREMENTS OF CRUSHED SURFACING TOP COURSE (CSTC) AS SPECIFIED IN THE WSDOT STD. SPECS SECTION 9-03.9(3). IN OTHER AREAS, IMPORTED MATERIAL SHALL MEET THE REQUIREMENTS OF CSTC OR GRAVEL BORROW AS SPECIFIED IN THE WSDOT STD. SPECS SECTION 9-03.14(1). IN BACKFILLING THE TRENCH, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE PIPE FROM ANY DAMAGE OR SHIFTING. THE CONTRACTOR SHALL BACKFILL FROM THE SIDE OF THE TRENCH TO A MAXIMUM UNIFORM DEPTH OF 1 FOOT ABOVE THE CROWN OF THE PIPE BEFORE STARTING MECHANICAL COMPACTION.

DURING ALL PHASES OF THE BACKFILLING OPERATIONS AND TESTING AS OUTLINED HEREIN, THE CONTRACTOR SHALL PROTECT THE PIPE INSTALLATION, PROVIDE FOR THE MAINTENANCE OF TRAFFIC AS MAY BE NECESSARY, AND PROVIDE FOR THE SAFETY OF PROPERTY AND PERSONS.

WHERE GOVERNMENTAL AGENCIES OTHER THAN THE CITY HAVE JURISDICTION OVER ROADWAYS, THE BACKFILL AND COMPACTION SHALL BE DONE TO THE SATISFACTION OF THE AGENCY HAVING JURISDICTION. IF SUITABLE BACKFILL MATERIAL IS NOT AVAILABLE FROM TRENCHING OPERATIONS OR TEMPORARY TRAFFIC CONTROL AND TRAFFIC SAFETY ISSUES EXIST, THE CITY MAY ORDER THE PLACING OF BEDDING AROUND THE WATER MAIN AND GRAVEL BASE OR CONTROLLED DENSITY FILL FOR BACKFILLING THE TRENCH.

CONTROLLED DENSITY FILL (CDF, AKA FLOWABLE FILL) SHALL BE A MIXTURE OF PORTLAND CEMENT, FLYASH (OPTIONAL), AGGREGATES, AND WATER. IT SHALL BE PROPORTIONED TO PROVIDE A GROUTY, NON-SEGREGATING, FREE FLOWING, SELF-CONSOLIDATING AND EXCAVATABLE MATERIAL THAT WILL RESULT IN A NON-SETTLING FILL WHICH HAS MEASURABLE UNCONFINED COMPRESSIVE STRENGTH. UNLESS OTHERWISE SPECIFIED, UNIT WEIGHTS SHALL RANGE FROM 125 LBS. PER CUBIC FOOT TO 155 LBS. PER CUBIC FOOT.

MATERIALS TESTING SHALL BE WITH UNCONFINED COMPRESSIVE TEST CYLINDERS. TEST DATA MAY BE EITHER LABORATORY TRAIL BATCH DATA OR FIELD TEST DATA.

SPECIFIC MIX DESIGNS MAY BE REQUIRED AT THE ENGINEER'S DISCRETION. APPROVED SOURCES ARE STONEWAY AND CADMAN.

THE UNCONFINED COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE A MINIMUM OF 50 PSI AND A MAXIMUM OF 100 PSI. MATERIAL SHALL BE A SAND/GROUT SLURRY PROPORTIONED TO BE HAND-EXCAVATABLE AFTER LONG-TERM STRENGTH GAIN.

IF CDF IS USED FOR TRENCH BACKFILL ON DUCTILE IRON, STEEL, OR COPPER UTILITY MAINS OR SERVICES, THE MAINS AND SERVICES SHALL BE ENCASED IN POLYETHYLENE WRAP.

TRENCH BACKFILL SHALL BE SPREAD IN LAYERS AND BE COMPACTED BY MECHANICAL TAMPERS OF THE IMPACT TYPE APPROVED BY THE ENGINEER. WATER SETTLING WILL NOT BE PERMITTED. AFTER THE INITIAL BACKFILL IS PLACED THE REMAINING BACKFILL MATERIAL SHALL BE PLACED IN SUCCESSIVE LAYERS NOT EXCEEDING 1 FOOT IN LOOSE THICKNESS, AND EACH LAYER SHALL BE COMPACTED TO THE DENSITY SPECIFIED BELOW:

IMPROVED AREAS SUCH AS STREET AND SIDEWALK AREAS SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY (MDD) PER ASTM D-1557 (MODIFIED PROCTOR). UNIMPROVED AREAS OF LANDSCAPE AREAS SHALL BE COMPACTED TO 90% OF MDD PER ASTM D-1557.

THE EXISTING ASPHALT SURFACE SHALL BE CUT ON A NEAT LINE BY SAW CUTTING, JACK-HAMMERING OR OTHER APPROVED METHOD PRIOR TO EXCAVATION TO PROVIDE A CONTINUOUS LINE. FOLLOWING PROPER BACKFILL AND COMPACTION OF THE TRENCH, THE EDGES OF THE SURFACING SHALL BE RETRIMMED (SAW CUT) 12 INCHES WIDER THAN THE EXCAVATION WITH STRAIGHT VERTICAL EDGES FREE FROM IRREGULARITIES. CRUSHED SURFACING TOP COURSE SHALL BE PLACED TO A COMPACTED THICKNESS OF 6 INCHES.

TEMPORARY RESTORATION OF TRENCHES SHALL BE ACCOMPLISHED BY USING 2-INCH LAYER OF HOT MIX ASPHALT CONCRETE PAVEMENT WHEN AVAILABLE OR 2-INCH LAYER OF MEDIUM-CURING (MC-250) LIQUID ASPHALT (COLD MIX), 2-INCH LAYER OF ASPHALT TREATED BASE (ATB), OR STEEL PLATES.

ATB USED FOR TEMPORARY RESTORATION MAY BE DUMPED DIRECTLY INTO THE TRENCH, BLADED AND ROLLED. AFTER ROLLING, THE TRENCH MUST BE FILLED FLUSH WITH THE EXISTING ASPHALT CONCRETE PAVEMENT TO PROVIDE A SMOOTH RIDING SURFACE.

ALL TEMPORARY PATCHES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL SUCH TIME AS THE PERMANENT PAVEMENT PATCH IS IN PLACE. IF THE CONTRACTOR IS UNABLE TO MAINTAIN A PATCH FOR WHATEVER REASON, THE CITY WILL PATCH IT AT ACTUAL COST PLUS OVERHEAD AND MATERIALS.

TRENCH RESTORATION SHALL BE EITHER BY A HMA PATCH OR HMA PATCH PLUS OVERLAY AS REQUIRED BY THE CITY.

ALL TRENCH AND PAVEMENT CUTS SHALL BE MADE BY SPADE BLADED JACKHAMMER OR SAW CUTS. ALL CUTS SHALL BE A MINIMUM DISTANCE OUTSIDE THE TRENCH WIDTH OF 12 INCHES.

REPLACEMENT OF THE ASPHALT CONCRETE OR PORTLAND CONCRETE CEMENT SHALL BE OF EXISTING DEPTH PLUS 1 INCH OR 3 INCHES, WHICHEVER IS GREATER.

TACK SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGE OF CUT AND SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN THE STANDARD SPECIFICATIONS. TACK COAT SHALL BE APPLIED AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

HOT MIX ASPHALT SHALL BE PLACED ON THE PREPARED SURFACE BY AN APPROVED PAVING MACHINE AND SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, EXCEPT THAT LONGITUDINAL JOINTS BETWEEN SUCCESSIVE LAYERS OF ASPHALT CONCRETE SHALL BE DISPLACED LATERALLY A MINIMUM OF 12 INCHES UNLESS OTHERWISE APPROVED BY THE CITY. FINE AND COARSE AGGREGATE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. ASPHALT CONCRETE OVER 2 INCHES THICK SHALL BE PLACED IN EQUAL LIFTS NOT TO EXCEED 2 INCHES EACH.

ALL STREET SURFACES, WALKS OR DRIVEWAYS WITHIN THE STREET TRENCHING AREAS AFFECTED BY THE TRENCHING SHALL BE FEATHERED AND LEVELED TO AN EXTENT THAT PROVIDES A SMOOTH-RIDING CONNECTION AND EXPEDITES DRAINAGE FLOW FOR THE NEWLY PAVED SURFACE. LEVELING AND FEATHERING AS REQUIRED BY THE CITY SHALL BE ACCOMPLISHED BY RAKING OUT THE OVERSIZED AGGREGATES FROM THE HMA AS APPROPRIATE.

SURFACE SMOOTHNESS SHALL BE PER THE STANDARD SPECIFICATIONS.

ALL JOINTS SHALL BE SEALED USING EMULSIFIED ASPHALT.

WHEN TRENCHING WITHIN THE ROADWAY SHOULDER(S), THE SHOULDER SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION.

THE FINAL PATCH SHALL BE COMPLETED AS SOON AS POSSIBLE AND SHALL BE COMPLETED WITHIN 30 DAYS AFTER FIRST OPENING THE TRENCH. THIS TIME FRAME MAY BE ADJUSTED IF DELAYS ARE DUE TO INCLEMENT PAVING WEATHER, OR OTHER ADVERSE CONDITIONS THAT MAY EXIST. HOWEVER, DELAYING OF FINAL PATCH OR OVERLAY WORK IS ALLOWABLE ONLY SUBJECT TO THE CITY'S APPROVAL.

GENERAL SANITARY SEWER CONSTRUCTION NOTES:

GENERAL:

SEE THE CITY OF CARNATION WATER AND SEWER COMBINED UTILITY STANDARDS (CITY STANDARDS), CURRENT EDITION, FOR FULL REQUIREMENT DETAILS.

PRIOR TO ANY PAVEMENT CUTTING OR REMOVAL, OR EXCAVATION FOR PIPE LAYING, THE CONTRACTOR SHALL VERIFY, IN THE PRESENCE OF THE CITY'S INSPECTOR, THE LOCATION AND DEPTH OF THE EXISTING SEWER MAIN AT THE POINT WHERE CONNECTION IS TO BE MADE. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS, TYPE, AND CONDITION OF THE EXISTING SEWER MAIN. IF NECESSARY, THE GRADE SHALL BE ADJUSTED SO NEITHER A HIGH SPOT NOR A LOW SPOT IS CREATED ADJACENT TO THE CONNECTION TO THE EXISTING SEWER MAIN.

WATER MAINS, PARALLEL TO A SEWER, SHALL NORMALLY BE ABOVE AND SEPARATED BY A DISTANCE OF AT LEAST TEN FEET HORIZONTALLY. UNDER UNUSUAL CIRCUMSTANCES, THE HORIZONTAL SPACING MAY BE ADJUSTED, SUBJECT TO THE APPROVAL OF THE CITY. WATER MAINS CROSSING SEWERS SHOULD BE NOT LESS THAN 18 INCHES ABOVE THE SEWER. WHERE IT IS NECESSARY FOR A SEWER TO CROSS WITHIN 18 INCHES, OR OVER THE WATER MAIN, PROTECTIVE MEASURES PER THE DOE CRITERIA FOR SEWAGE WORKS DESIGN (ORANGE BOOK) SHALL BE TAKEN.

FIELD STAKING FOR SEWER LINE AND GRADE FOR SEWER VACUUM BRANCH MAIN AND VACUUM SEWER LATERALS SHALL BE PERFORMED BY LICENSED SURVEYOR.

PIPING, VALVES, VALVE PITS, AND APPURTENANCES SHALL NOT BE BURIED UNTIL OBSERVED AND ACCEPTED BY CITY REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND SCHEDULING TIMELY SITE OBSERVATIONS BY CITY REPRESENTATIVE.

TRENCHES SHALL BE EXCAVATED TO THE LINE AND DEPTH DESIGNATED BY THE PLANS TO PROVIDE THE COVER ON THE WATER SYSTEM OR SANITARY SEWER SYSTEM AS SPECIFIED BY THE CITY. PERFORM TRENCHING IN ACCORDANCE WITH THE GENERAL UTILITY PIPE TRENCHING AND TRENCH PATCHING NOTES ON SHEETS C02 & C03.

THE CITY HAS A VACUUM SEWER SYSTEM THAT OPERATES DIFFERENTLY THAN STANDARD GRAVITY SEWER. A BREAK IN THE MAINLINE, OR BETWEEN MAINLINE AND VALVE PITS, WILL SHUTDOWN THE ENTIRE TRUNKLINE, BETWEEN VACUUM STATION AND END USER. THE INSTALLATION OF ALL SANITARY SEWER FACILITIES SHALL BE DONE PER PLANS WHICH HAVE BEEN APPROVED BY THE CITY.

BEFORE INSTALLATION, MATERIAL SUBMITTALS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR ACCEPTANCE FOR ALL MATERIALS TO BE INSTALLED. ALL MATERIALS SHALL BE NEW AND UNDAMAGED. ALL MATERIALS NOT SPECIFICALLY REFERENCED SHALL COMPLY WITH APPLICABLE SECTIONS OF ANSI, ASTM, AWWA, AND THE STANDARD SPECIFICATIONS.

APPROVED MANUFACTURERS AND MODEL NUMBERS OF VARIOUS MATERIALS ARE LISTED IN APPROVED MATERIALS LIST INCLUDED IN THE CITY STANDARDS. WHEN SPECIFIC MANUFACTURERS OR MODELS ARE LISTED, NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY THE CITY.

PIPE:

VACUUM SEWER MAIN AND LATERALS SHALL BE CONSTRUCTED OF ASTM 2241 SDR 21 PVC, 200 PSI PRESSURE RATED, UNLESS OTHERWISE APPROVED BY CITY.

CONNECTIONS TO EXISTING VACUUM SEWER MAIN SHALL BE MADE WITH ROMAC 501 COUPLINGS OR APPROVED EQUAL.

GRAVITY SEWERS AND SERVICES SHALL BE CONSTRUCTED OF ASTM 2241 SDR 21 PVC, ASTM 3034 SDR 35 PVC, OR CLASS 50 DUCTILE IRON PIPE CONFORMING TO SECTION 9-05.12 OF THE STANDARD SPECIFICATIONS UNLESS SHOWN OTHERWISE ON DRAWINGS. PVC GRAVITY SEWER SERVICE PIPE SHALL BE CONSIDERED FLEXIBLE CONDUIT. PVC COMPOUND SHALL MEET THE REQUIREMENTS OF ASTM D 1784 FOR CLASS 12454-B PVC. VENT PIPES SHALL BE PVC SDR 21 OR SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS AS SHOWN ON THE STANDARD DETAIL. INSTALLATION OF TRACER TAPE OR WIRE OVER THE SIDE SEWER IS REQUIRED.

DUCTILE IRON PIPE (CLASS 50) MAY BE USED IN LIEU OF PVC PIPE PROVIDED THE DUCTILE IRON PIPE IS LINED WITH PROTECTO 401 CERAMIC-EPOXY OR APPROVED EQUAL. ALL LININGS SHALL BE APPLIED PER THE MANUFACTURER'S RECOMMENDATIONS.

THE INTERIOR OF THE PIPE SHALL BE KEPT CLEAN AND FREE FROM DIRT, CEMENT, OR ANY OTHER SUPERFLUOUS, AND EACH JOINT LEFT ENTIRELY FREE FROM ANY PROTRUDING MATERIAL ON THE INSIDE OF THE PIPE JOINT OR PIPE BARREL.

COUPLINGS:

ONLY ROMAC, FERNCO COUPLINGS OR FORD FLEXIBLE COUPLINGS MAY BE USED. FERNCO COUPLINGS ARE ONLY ALLOWED AT THE BUILDING CONNECTION TO THE SIDE SEWER, NOT AT THE CONNECTION TO THE CITY SIDE SEWER. THEY SHALL BE INSTALLED AS PRESCRIBED BY THE MANUFACTURER OF THE COUPLING, AND IN A MANNER SATISFACTORY TO THE CITY.

WYES, TEES AND CLEANOUTS:

CLEANOUTS SHALL BE REQUIRED FOR ALL SIDE SEWERS LONGER THAN 100 FEET AS MEASURED FROM THE OWNER'S PROPERTY OR EASEMENT LINE AND THE BUILDING FOUNDATION. CLEANOUTS SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 100 FEET AND ARE ENCOURAGED AT CHANGES OF PIPE ALIGNMENT.

WYES AND CLEANOUTS SHALL BE PLACED AT ANY LOCATION OR LOCATIONS WHICH, IN THE CITY'S OPINION, ARE REASONABLY NECESSARY TO ASSURE A PROPER INSTALLATION.

ALL WYES TO BE INSTALLED FOR USE AS A PERMANENT CLEANOUT, AND ALL TEMPORARY OR FUTURE ENDS OF RUNS SHALL BE PLUGGED WITH A PLUG OF A TYPE SATISFACTORY TO THE CITY AND SHALL BE MADE COMPLETELY WATERTIGHT. IT IS THE INSTALLER'S RESPONSIBILITY TO ASSURE THAT SUCH PLUG WILL NOT BE BLOWN OUT OR MOVED BY THE TESTING PRESSURE IN THE SEWER SYSTEM. ANY SUCH MEANS OF PREVENTION SHALL BE EASILY REMOVABLE WITHOUT DAMAGE TO THE FITTING OR THE PLUG.

NO SIDE SEWER SHALL BE COVERED OR BACKFILLED PRIOR TO THE FIELD INSPECTION BY THE CITY. ANY PERSON PERFORMING WORK SUBJECT TO THE PROVISIONS OF THIS POLICY SHALL NOTIFY THE CITY AS LEAST FORTY EIGHT (48) HOURS IN ADVANCE OF WHEN THE WORK WILL BE READY FOR INSPECTION AND TESTING, AND AN APPOINTMENT WILL BE ARRANGED FOR THE INSPECTION. THE OWNER OR CONTRACTOR MUST BE PRESENT DURING THE INSPECTION. IF AN APPOINTMENT HAS BEEN SCHEDULED AND THE INSPECTOR ARRIVES AND FINDS THAT, IN FACT, THE SIDE SEWER IS NOT READY FOR TESTING AND INSPECTION, A NEW APPOINTMENT MUST BE MADE AND A CHARGE MADE FOR THE SECOND VISIT AS ESTABLISHED BY THE CITY.

BENDS:

BENDS USED FOR VACUUM LINE DIRECTIONAL CHANGES, BRANCH TO MAIN CONNECTIONS, AND VALVE PIT TO BRANCH OR MAIN CONNECTIONS MAY NOT EXCEED 45 DEGREES. FITTINGS SHALL BE CONSTRUCTED OF ASTM 2241 SDR21 UNLESS OTHERWISE APPROVED BY CITY.

VALVES:

GATE VALVES USED FOR VACUUM SEWER SYSTEM SHALL CONFORM TO ANSI/AWWA C509-94, STANDARD FOR RESILIENT SEATED GATE VALVES, AS MANUFACTURED BY MUELLER OR M&H.

MECHANICAL JOINT CONNECTIONS WITH TRANSITION TO PVC GASKETS SHALL BE PROVIDED. ALL FLANGE FACES SHALL BE MACHINED AND DRILLED TO STRADDLE THE VERTICAL CENTERLINE

BURIED VALVES SHALL BE PROVIDED WITH VALVE BOXES AND THE OPERATING NUT SHALL BE EXTENDED TO WITHIN 9", PLUS OR MINUS 6", OF THE FINISHED GRADE. THE VALVE BOX COVER SHALL HAVE THE WORDS "SEWER" AND "OPEN" WITH A DIRECTIONAL ARROW CAST ON IT. LOCK DOWN SET SCREWS SHALL NOT BE USED ON VALVE OPERATING NUT EXTENSIONS

TWO (2) TEE KEYS SHALL BE PROVIDED FOR EACH VALVE SIZE REQUIRED.

VALVE PIT:

SHALL BE AS MANUFACTURED BY BILFIGER/AIR VAC, MODEL TO BE SPECIFIED ON DRAWINGS.

VALVE PIT COVERS SHALL BE MODEL R5900 BY NEENAH FOUNDRY OR EQUAL, AND SHALL BE DESIGNED FOR H-20 LOADING. CASTINGS SHALL MEET ASTM A-48, CLASS 30 GRAY CAST IRON. COVERS SHALL BEAR THE NAME "AIRVAC SEWER" ON ITS TOP IN 1" TALL RAISED LETTERS, UNLESS OTHERWISE DIRECTED BY CITY. RISER RINGS ARE NOT TO BE USED ON VALVE PITS UNLESS PRIOR APPROVAL IS OBTAINED FROM CITY.

VALVE PITS SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.

AN ELASTOMER SEAL/GROMMET SHALL BE PROVIDED FOR EACH PIPE PASSING THROUGH VALVE PIT, VALVE PIT BOTTOM AND SUMP TO PROVIDE A SEAL AGAINST GROUND WATER WITHOUT THE USE OF THREADED FASTENERS. IF THE VALVE PIT IS PROVIDED WITH AN INTEGRAL PLAIN END PORTION OF PIPE, THE GRAVITY SEWER TO VALVE PIT CONNECTION SHALL BE MADE USING A STANDARD GASKETED BELL END CONNECTION.

VALVE PIT BEDDING & BACKFILL
VALVE PITS SHALL BE FOUNDED ON A 3" LAYER OF CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT STD. SPEC. SECTION 9-03.9(3) AND BACKFILLELD WITH CSTC PER SAME STANDARD OR SAND PER WSDOT STD. SPEC. SECTION 9-03.13(1) OR CSTC. ALL VALVE PITS WITHIN ROW SHALL HAVE TOP 12" BACKFILLED WITH CRUSHED SURFACING BASE COURSE (CSBC) PER WSDOT STD. SPEC. SECTION 9-03.9(3). VALVE PIT BACKFILL SHALL BE MECHANICALLY COMPACTED TO 90% OF MAXIMUM DENSITY (MODIFIED PROCTOR TEST) AND 95% AT THE UPPER 4 FEET WITHIN THE ROW AND ALL AREAS (PAVED AND UNPAVED) WHERE STREETS, ROADWAY SHOULDERS, DRIVEWAYS, SIDEWALKS, OR PARKING LOTS WILL BE CONSTRUCTED OR RECONSTRUCTED. SPECIAL CARE SHALL BE TAKEN IMMEDIATELY ADJACANT TO VALVE PIT STRUCTURES WHILE COMPACTING AND THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE INCURRED TO VALVE PITS DURING COMPACTION. SEE DETAIL FOR VALVE PIT INSTALLATION.

VACUUM SYSTEM AIR INTAKE

EACH BUILDING'S GRAVITY SEWER SERVICE SHALL BE FITTED WITH A 4" AIR VENT OR A 6" AIR TERMINAL SHALL BE PROVIDED FOR EACH VALVE PIT, PER CITY STANDARDS.

PIPE BEDDING:

PIPE BEDDING MATERIAL, SHALL BE CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT STD IF THE NATIVE MATERIAL IS NOT SUITABLE FOR GRAVITY SEWER PIPE BEDDING, THE IMPORTED PIPE BEDDING SHALL BE 5/8-INCH CRUSHED SURFACING. THE TOP OF THE PIPE AND ALL FITTINGS SHALL REMAIN EXPOSED FOR INSPECTION. THE LOWER PORTION OF THE BEDDING TO THE SPRING LINE SHALL BE COMPLETED BEFORE INSPECTION OR TESTING OF THE SIDE SEWER.

WHERE TRENCH BOTTOM IS IN QUICKSAND, MULCH, PEAT OR OTHER UNSTABLE MATERIAL, A STABLE FOUNDATION OF GRAVEL SHALL BE PROVIDED. THE RESPONSIBILITY FOR ADEQUATE PIPE BEDDING WILL REST ENTIRELY WITH THE CONTRACTOR. BEDDING MATERIAL SHALL BE SATISFACTORY TO THE CITY AND SO PLACED AS TO PRECLUDE THE POSSIBILITY OF LARGE ROCKS OR BOULDERS BEARING DIRECTLY AGAINST THE SEWER PIPE.

SERVICE CONNECTIONS FROM VALVE PIT TO BRANCH OR MAIN LINES (INCLUDING FLEXIBLE CONNCECTOR PIPE) SHALL BE SET ON A COMPACTED BENCH OF BACKFILL MATERIAL CONSISTANT WITH VALE PIT BACKFILL REQUIREMNTS ABOVE. THIS SHALL ENCOMPASS PARTIALLY BACKFILLING THE VALVE PIT PRIOR TO INSTALLING THE SERVICE CONNECTION.

GRADE AND ALIGNMENT:
(MINIMUM AND MAXIMUM)

ALL SIDE SEWERS SHALL BE LAID TO A MINIMUM GRADE OF ONE AND ONE-HALF (1.5)% AND A MAXIMUM GRADE OF 2 FEET VERTICAL TO 1 FOOT HORIZONTAL (200%), UNLESS OTHERWISE EXPLICITLY AUTHORIZED IN WRITING BY THE CITY. SIDE SEWER GRADES OF 2% MINIMUM ARE RECOMMENDED. SIDE SEWERS SHALL BE CONSTRUCTED WITH A MAXIMUM PIPE DEFLECTION OF NOT MORE THAN 2 INCHES PER FOOT. THE MAXIMUM DEFLECTION PERMISSIBLE AT ANY ONE FITTING SHALL NOT EXCEED 45 DEGREES WITH MINIMUM OF 24 INCHES SEPARATION BETWEEN BENDS.

A MINIMUM HORIZONTAL SEPARATION OF 10 FEET AND A MINIMUM VERTICAL SEPARATION OF 18 INCHES BETWEEN ALL SEWER LINES AND WATER LINES MUST BE MAINTAINED, PER WASHINGTON DEPARTMENTS OF ECOLOGY'S ORANGE BOOK (2008, OR LATEST EDITION). ANY UNUSUAL CONDITIONS WHICH PREVENT THESE SEPARATIONS SHALL CONFORM TO ALL GUIDELINES WITHIN THE ORANGE BOOK AND SHALL UTILIZE APPLICABLE MITIGATION TECHNIQUES.

HDPE PIPE AND FITTINGS - FORCE MAINS ONLY
HDPE PIPING COMPONENTS SHALL BE MANUFACTURED FROM MATERIALS THAT MEISION.

FOR PIPE BENDS 14 INCHES AND SMALLER AND WHERE LONG RADIUS BENDS ARE SPECIFIED FOR THE PIPING SYSTEM, PROVIDE ARC™ SWEEP BENDS MANUFACTURED BY PIPESTAR INTERNATIONAL, OR EQUAL. BEND RADIUS SHALL BE THREE TIMES THE PIPE DIAMETER, MEASURED TO THE CENTER LINE OF THE BEND FOR LONG-RADIUS BENDS. FLANGE FITTINET OR EXCEED THE REQUIREMENTS OF THE PLASTIC PIPING INSTITUTE DESIGNATION PE3408 AND THAT CONFORM TO THE REQUIREMENTS OF ASTM D3350 FOR A CELL CLASSIFICATION OF PE 345434C. PIPE MARKING SHALL CONFORM TO THE REQUIREMENTS OF AWWA C906.

BOLTS AND NUTS FOR BURIED MECHANICAL JOINING COMPONENTS SUCH AS FLANGES SHALL BE MADE OF NONCORROSIVE, HIGH-STRENGTH, LOW-ALLOY STEEL HAVING THE CHARACTERISTICS SPECIFIED IN ANSI/AWWA C111/A21, REGARDLESS OF ANY PROTECTIVE COATING.

PIPE SHALL HAVE THE NOMINAL DIMENSIONS SHOWN WITH AN IPS OUTSIDE DIAMETER BASIS AND THE DIMENSIONS AND TOLERANCES SPECIFIED IN AWWA C906. DR RATING SHALL BE 26 AND PRESSURE CLASS SHALL BE 64 PSI.

FITTINGS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AWWA C906 FOR THE JOINING METHODS SPECIFIED IN THIS SPECIAL PROVGS SHALL BE FLANGE TYPE VR 955.

SIDE SEWER STUB SERVICE:
(RIGHT-OF-WAY CONSTRUCTION)

NOTE: THE FOLLOWING SPECIFICATIONS ARE IN ADDITION TO THE REQUIREMENT OF ANY STUB SERVICE ROAD CUT PERMIT.

LARGER CHANGES IN DIRECTION SHALL BE MADE BY USE OF STANDARD 11-1/4 DEGREE OR 22-1/2 DEGREE BENDS. NO MORE THAN ONE BEND PER STUB SERVICE WILL BE ALLOWED.

GRADE AND ALIGNMENT SHALL BE PER OTHER SECTION OF THESE STANDARDS. EACH SIDE SEWER STUB SHALL TERMINATE WITH A 6 INCH CAP WITHIN 1 FOOT OF THE PROPERTY OR PERMANENT EASEMENT LINE.

THE CONTRACTOR MAY ELECT TO EXTEND THE SIDE SEWER STUB BY ONE LENGTH OF SIDE SEWER PIPE. ANY SUCH EXTENSION SHALL NOT EXCEED 12 FEET IN LENGTH FROMTRUCTED PER CITY STANDARD DETAIL. ALL GATE VALVES AND FITTINGS SHALL BE DUCTILE IRON WITH ANSI MECHANCIAL JOINT ENDS. ALL EXISTING VALVES SHALL BE OPERATED BY CITY EMPLOYEES ONLY.

THE DESIGN, MATERIALS, AND WORKMANSHIP OF ALL GATE VALVES SHALL CONFORM TO AWWA C515-01 (OR LATEST REVISION). GATE VALVES SHALL BE RESILIENT WEDGE NON-RISING STEM (NRS) WITH TWO INTERNAL O-RING STEM SEALS.

TESTING SPECIFICATIONS:

VACUUM SEWER MAINS AND FITTINGS A TEE INSTALLED AT THE PROPERTY LINE. THE TEE, WITH A PUSH-IN PLUG, SHALL BE LAID IN SUCH A FASHION THAT THE BRANCH IS VERTICAL. SUCH LENGTH OF SIDE SEWER SHALL TERMINATE WITH A CAP, AND SHALL BE TESTED ALONG WITH THE STUB SERVICE.

ALL SIDE SEWER STUBS SHALL BE 6-INCH MINIMUM. COMMERCIAL OR MULTIFAMILY UNITS MAY REQUIRE LARGER SIDE SEWER STUBS AND WILL BE REVIEWED BY THE CITY.

DIVISION VALVES & GAUGE TAPS
DIVISION VALVE AND GAUGE TAP INSTALLATION SHALL BE CONS
TESTING OF ALL SEWER MAINS AND LATERAL CONNECTIONS SHALL BE PERFORMED DAILY IN ACCORDANCE TO THE FOLLOWING PROCEDURE:

PLUG ALL OPEN CONNECTIONS WITH RUBBER STOPPERS OR TEMPORARY CAPS, FITTED TO THE PIPE BY "NO-HUB" COUPLINGS. APPLY A VACUUM TO 22 INCHES HG TO THE PIPES AND ALLOW THE PRESSURE TO STABILIZE FOR 15 MINUTES. THERE SHALL BE NO LOSS OF VACUUM IN EXCESS OF 1% PER HOUR FOR A TWO-HOUR TEST PERIOD. THERE SHALL BE ABSOLUTELY NO WATER ALLOWED TO BE ADMITTED INTO THE PIPING NETWORK DURING THIS TEST. AS PIPE IS LAID THE NEW SECTION SHALL BE TESTED IN ADDITION TO THE PREVIOUSLY LAID PIPE ON THAT MAIN.

THE CONTRACTOR SHOULD LEAVE THE SEWER MAIN PIPE JOINTS UNCOVERED UNTIL AFTER THE DAILY VACUUM TEST IS COMPLETE SO THAT ANY LEAKS CAN BE EASILY LOCATED AND REPAIRED.

TESTING MODIFICATIONS MAY BE ALLOWED IF DEEMED APPROPRIATE AND SUFFICIENT BY THE CITY. ALL MODIFICATIONS MUST BE APPROVED BY CITY PRIOR TO USE IN THE FORM OF EXPLICIT WRITTEN CONSENT.

VACUUM PIPE FLUSHING:

AFTER ACCEPTANCE OF VACUUM TESTING, FLUSH LINES TO REMOVE DEBRIS AND FOREIGN MATERIALS THAT ACCUMULATED IN THE LINES DURING CONSTRUCTION.

SIDE SEWER TESTING:

PRIOR TO BEING CONNECTED TO THE PREMISES ALL SIDE SEWERS SHALL BE TESTED BY ONE OF THE TWO FOLLOWING METHODS:

EXFILTRATION:

THE SIDE SEWER SHALL BE FILLED WITH WATER THROUGH A RISER THAT EXTENDS A MINIMUM OF 5 FEET ABOVE FINISHED GRADE AT THE INSTALLATION. THE RISER SHALL BE FILLED WITH WATER AND NO NOTICEABLE DROP IN THE WATER LEVEL SHALL BE ACCEPTED FOR A PERIOD OF NOT LESS THAN 10 MINUTES OF OBSERVATION. THE RISER MAY DOUBLE AS THE SIDE SEWER VENT PIPE. THE RISER SHALL BE CUT TO THE REQUIRED LENGTH FOR THE VENT PIPE AFTER THE SIDE SEWER PASSES THE EX-FILTRATION TEST.

AIR TEST:

ALL EQUIPMENT REQUIRED TO MAKE SUCH TESTS, INCLUDING PLUGS, HOSES, BLOCKING, AIR PUMPS, WATER AND OTHER EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR.

AIR TESTING SHALL MEET THE FOLLOWING REQUIREMENTS:

PIPE SIZESECONDS PER LINEAL FOOT OF PIPE4"1.06"1.5DECOMPRESSION IS FROM 3.5 PSI TO 3.0 PSI. FOR HIGH GROUNDWATER TABLE CONDITIONS, ADD 0.5 PSI PER FOOT OF GROUND WATER ABOVE THE PIPE.

HDPE FORCE MAIN TESTING:
(IF APPLICABLE)

HDPE FORCE MAIN SHALL BE TESTED AT 60 PSI HYDROSTATIC FOR 3 MINUTES.

SIDE SEWER CONNECTIONS:

NO MORE THAN ONE BUILDING MAY BE CONNECTED WITH THE SIDE SEWER UNLESS THE CITY ISSUES AN EXEMPTION FOR MULTIPLE CONNECTIONS. AN EXEMPTION WILL BE ISSUED ONLY UPON THE CONDITION THAT THE PERMITTEE HAS NO OTHER FEASIBLE OPTION BASED ON UTILITY CONFLICTS OR SPACE CONSIDERATIONS OR OTHER TECHNICAL ISSUE THAT PREVENTS INSTALLATION OF SEPARATE SIDE SEWERS. THE PERMITTEE SHALL HOLD THE CITY HARMLESS FROM ANY DAMAGES BY REASON OF SUCH INSTALLATION AND SUBJECT TO THE FOLLOWING REGULATIONS:

COMMON SIDE SEWERS:

TWO HOUSES MAY BE CONNECTED TO A COMMON SIDE SEWER WHEN THE FOLLOWING CONDITIONS ARE MET: (1) AT THE END OF THE COMMON PORTION OF THE JOINT SIDE SEWER A CLEANOUT SHALL BE INSTALLED PER DETAIL FOR JOINT SIDE SEWER CLEANOUT; AND (2) A BACKWATER VALVE SHALL BE INSTALLED ON BOTH HOUSES.

BACKWATER VALVES:

BACKWATER VALVES SHALL BE INSTALLED ON ALL BUILDINGS EXCEPT WHEN WAIVED BY THE CITY. BACKFLOW VALVES MAY BE USED AS THE CLEANOUT BETWEEN THE HOUSE PLUMBING AND SIDE SEWER AS OTHERWISE REQUIRED BY THESE STANDARDS. BACKFLOW VALVES MAY BE EITHER ALTERNATE NO. 1 OR NO 2 AS SHOWN ON THE STANDARD DETAILS.

REQUIRED SIDE SEWER SIZE:

SIDE SEWERS SHALL BE 6" UNLESS OTHERWISE APPROVED BY THE CITY.

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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Digitally signed by Tim Gabelein Date: 2022.10.06 12:57:33 -07'00'

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER:
TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT:
TOLT VILLAS
CARNATION, WA 98014
GENERAL NOTES

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 — SHEET 3 OF 27

SHEET NUMBER
C03

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

GENERAL WATER CONSTRUCTION NOTES:

PRIOR TO ANY PAVEMENT CUTTING OR REMOVAL, OR EXCAVATION FOR PIPE LAYING, THE CONTRACTOR SHALL VERIFY, IN THE PRESENCE OF THE CITY'S INSPECTOR, THE LOCATION AND DEPTH OF THE EXISTING WATER MAINS AT THE POINTS WHERE CONNECTIONS ARE TO BE MADE. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS, TYPE, AND CONDITION OF THE EXISTING WATER MAIN. IF NECESSARY, THE GRADE SHALL BE ADJUSTED SO NEITHER A HIGH SPOT NOR A LOW SPOT IS CREATED ADJACENT TO THE CONNECTION TO THE EXISTING WATER MAINS.

WATER MAINS, PARALLEL TO A SEWER, SHALL NORMALLY BE ABOVE AND SEPARATED BY A DISTANCE OF AT LEAST TEN FEET HORIZONTALLY. UNDER UNUSUAL CIRCUMSTANCES, THE HORIZONTAL SPACING MAY BE ADJUSTED, SUBJECT TO THE APPROVAL OF THE CITY. WATER MAINS CROSSING SEWERS SHOULD BE NOT LESS THAN 18 INCHES ABOVE THE SEWER. WHERE IT IS NECESSARY FOR A SEWER TO CROSS WITHIN 18 INCHES, OR OVER THE WATER MAIN, PROTECTIVE MEASURES PER THE DOE CRITERIA FOR SEWAGE WORKS DESIGN (ORANGE BOOK) SHALL BE TAKEN.

PIPING, VALVES, AND APPURTENANCES SHALL NOT BE BURIED UNTIL OBSERVED AND ACCEPTED BY CITY REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND SCHEDULING TIMELY SITE OBSERVATIONS BY CITY REPRESENTATIVE.

TRENCHES SHALL BE EXCAVATED TO THE LINE AND DEPTH DESIGNATED BY THE PLANS TO PROVIDE THE COVER ON THE WATER SYSTEM OR SANITARY SEWER SYSTEM AS SPECIFIED BY THE CITY. PERFORM TRENCHING IN ACCORDANCE WITH THE GENERAL UTILITY PIPE TRENCHING AND TRENCH PATCHING NOTES ON SHEETS C02 & C03.

BEFORE INSTALLATION, MATERIAL SUBMITTALS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR ACCEPTANCE FOR ALL MATERIALS TO BE INSTALLED. ALL MATERIALS SHALL BE NEW AND UNDAMAGED. THE SAME MANUFACTURER OF EACH ITEM SHALL BE USED THROUGHOUT THE WORK. ALL MATERIALS NOT SPECIFICALLY REFERENCED SHALL COMPLY WITH APPLICABLE SECTIONS OF ANSI, ASTM, AWWA, AND THE STANDARD SPECIFICATIONS.

APPROVED MANUFACTURERS AND MODEL NUMBERS OF VARIOUS MATERIALS ARE LISTED IN APPROVED MATERIALS LIST INCLUDED WITH THESE STANDARDS. WHEN SPECIFIC MANUFACTURERS OR MODELS ARE LISTED, NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY THE CITY.

DUCTILE IRON PIPE:

DUCTILE IRON PIPE SHALL CONFORM TO ANSI SPECIFICATION A21.51, 1976, AWWA C151-76, OR THE LATEST REVISION THEREOF AND SHALL BE OF THE THICKNESS CLASS 52 FOR PIPE UNLESS OTHERWISE SPECIFIED BY THE CITY. THE PIPE SHALL BE FURNISHED WITH RUBBER GASKETED PUSH-ON TYPE JOINTS EXCEPT WHERE FLANGED OR MECHANICAL JOINTS ARE SPECIFICALLY REQUIRED BY THE CITY. JOINT DETAILS SHALL BE AS SPECIFIED IN ANSI A21.11. PIPE WITH PUSH-ON FITTING JOINTS SHALL BE SUITABLE FOR USE WITH MECHANICAL JOINT FITTINGS. THE PIPES SHALL BE COATED AS SPECIFIED IN ANSI A21.51 AND BE FURNISHED WITH CEMENT MORTAR LINING AS SPECIFIED IN ANSI A21.4. THE CONTRACTOR SHALL FURNISH CERTIFICATION FROM THE MANUFACTURER OF THE PIPE AND GASKET BEING SUPPLIED THAT THE INSPECTION OF ALL THE SPECIFIED TESTS HAVE BEEN MADE AND THE RESULTS THEREOF COMPLY WITH THE REQUIREMENTS OF THE ABOVE-REFERENCED STANDARDS.

FITTINGS:

ALL FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON COMPACT (SHORT BODY) FITTINGS CONFORMING TO AWWA C153 OR CLASS 250 GRAY IRON CONFORMING TO AWWA C110 AND C111. ALL FITTINGS SHALL BE CEMENT MORTAR LINED CONFORMING TO AWWA C104. PLAIN END FITTINGS SHALL BE DUCTILE IRON IF MECHANICAL JOINT RETAINER GLANDS ARE INSTALLED ON THE PLAIN ENDS. ALL FITTINGS SHALL BE CONNECTED BY FLANGES OR MECHANICAL JOINTS. FLANGES SHALL BE CLASS 125, DRILLED IN ACCORDANCE WITH ANSI A21.10. GASKET FOR FLANGED FITTINGS SHALL BE NEOPRENE, BUNA N, CHLORINATED BUTYL, CLOTH-INSERTED RUBBER, OR APPROVED EQUAL. GASKETS FOR PUSH-ON TYPE AND MECHANICAL JOINTS SHALL CONFORM TO ANSI A21.11. RUBBER GASKETS FOR PUSH-ON JOINTS OR MECHANICAL JOINT (M.J.) SHALL BE IN ACCORDANCE WITH ANSI A21.11, AWWA C111. GASKET MATERIAL FOR FLANGES SHALL BE NEOPRENE, BUNA N, CHLORINATED BUTYL, OR CLOTH-INSERTED RUBBER.

JOINT RESTRAINT SYSTEMS:

JOINT RESTRAINT METHODS SHALL BE AS PER THE APPROVED MATERIALS LIST AND/OR THE STANDARD DETAILS. ACCEPTABLE JOINT RESTRAINT SYSTEMS ARE LIMITED TO: EBAA IRON (MEGALUG 1100), GRIFFIN PIPE PRODUCTS COMPANY (SNAP-LOK), ROMAC (GRIP RING), PACIFIC STATES RESTRAINED JOINT, US PIPE (TR FLEX), MUELLER (AQUA GRIP), ONE BOLT, FIELD LOK GASKETS.

POLYETHYLENE ENCASEMENT:

POLYETHYLENE ENCASEMENT SHALL BE EIGHT MIL. TUBE OR SHEET STOCK AND SHALL BE FURNISHED WHERE THE TRENCH IS BACKFILLED WITH CDF, WHERE SOILS TESTING INDICATES THIS IS OF VALUE OR AS DIRECTED BY THE CITY. MATERIALS SHALL COMPLY WITH AWWA C105.

COUPLINGS:

FLEXIBLE COUPLINGS AND TRANSITION COUPLING CAST COMPONENTS SHALL BE DUCTILE IRON. CENTER RINGS AND END RINGS SHALL BE DUCTILE IRON IN ACCORDANCE WITH ASTM 536-80, GRADE 65-45-12. GASKET MATERIAL SHALL BE VIRGIN SBR IN ACCORDANCE WITH ASTM D2000 3 BA715. BOLTS SHALL BE HIGH STRENGTH, LOW ALLOY STEEL TRACKHEAD BOLTS WITH NATIONAL COURSE ROLLED THREAD AND HEAVY HEX NUTS. STEEL SHALL MEET AWWA/ANSI C11/A21.11 COMPOSITION SPECIFICATIONS. COUPLINGS SHALL BE MANUFACTURED BY ROMAC OR DRESSER.

ADAPTERS:

ADAPTERS SHALL BE ROMAC FLANGE COUPLING ADAPTERS.

BOLTS IN PIPING:

BOLTS SHALL BE MALLEABLE IRON COR-TEN, OR STAINLESS STEEL. T-BOLTS SHALL BE MALLEABLE IRON COR-TEN IN ACCORDANCE WITH AWWA/ANSI C111/A21.11. STAINLESS STEEL BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A-307, GRADE A. SHACKLE RODS, NUTS, AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M232 AND/OR COATED THOROUGHLY WITH COAL-TAR/ASPHALTIC MATERIAL. STAINLESS STEEL NUTS, BOLTS, AND WASHERS SHALL BE TYPE 304.

HYDRANTS:

HYDRANTS SHALL BE THE "TRAFFIC MODEL" TYPE WITH APPROVED BREAKAWAY FEATURES. ALL HYDRANTS SHALL BE BRASS TO BRASS SUBSEAT, MINIMUM VALVE OPENING OF 5-1/4 INCHES "O" RING STEM SEAL, 6 INCH MECHANICAL SHOE CONNECTION, 1-1/4 INCH PENTAGONAL OPERATING NUT. FIRE HYDRANTS SHALL HAVE TWO, 2-1/2 INCH OUTLETS AND ONE 4-1/2-INCH PUMPER PORT OUTLET. ALL OUTPORT THREADS SHALL BE NATIONAL STANDARD THREAD. THE VALVE OPENING SHALL BE 5-1/4 INCH DIAMETER. THE HYDRANT SHALL HAVE A POSITIVE AND AUTOMATIC BARREL DRAIN. HYDRANT SHALL BE M & H 929 OR APPROVED EQUAL. ALL HYDRANTS SHALL BE BAGGED UNTIL SYSTEM IS APPROVED.

THE LEAD FROM THE SERVICE MAIN TO THE FIRE HYDRANT SHALL BE DUCTILE IRON CEMENT MORTAR LINED CLASS 52, NO LESS THAN 6 INCHES IN DIAMETER, WITH A MAXIMUM LENGTH OF 50 FEET. WHERE LEADS REQUIRE MORE THAN ONE LENGTH OF PIPE, FIELD LOK GASKETS ARE REQUIRED.

FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS, AT LOCATIONS AS SHOWN ON THE APPROVED PLANS. THEY SHALL BE PAINTED WITH 2 COATS OF HIGH GLOSS CATERPILLAR YELLOW PRESERVATIVE 43-616 TYPE PAINT.

ALL HOOK-UPS TO FIRE HYDRANTS FOR TEMPORARY WATER FOR WHATEVER PURPOSE SHALL BE APPROVED BY THE CITY.

HYDRANT VALVES INSTALLED IN UNPAVED AREAS SHALL HAVE A 4-INCH THICK, 2-FEET SQUARE ASPHALT CEMENT PAD PLACED AROUND THEM.

HYDRANTS SHALL STAND PLUMB, BE SET TO THE FINISHED GRADE PER THE STANDARD DETAIL WITH THE LOWEST OUTLET OF THE HYDRANT NO LESS THAN 18 INCHES ABOVE GRADE AND NO LESS THAN 36 INCHES OF CLEAR AREA ABOUT THE HYDRANT FOR CLEARANCE OF A HYDRANT WRENCH ON ALL OUTLETS AND ON THE CONTROL VALVE. THE PUMPER PORT SHALL FACE THE STREET. WHERE THE STREET CANNOT BE CLEARLY DEFINED OR RECOGNIZED, THE PORT SHALL FACE THE MOST LIKELY ROUTE OF APPROACH AND LOCATION OF THE FIRE TRUCK WHILE PUMPING AS DETERMINED BY THE CITY.

VALVES:

ALL VALVES AND FITTINGS SHALL BE DUCTILE IRON WITH ANSI FLANGES OR MECHANICAL JOINT ENDS. ALL EXISTING VALVES SHALL BE OPERATED BY CITY EMPLOYEES ONLY.

ALL VALVES SHALL BE INSPECTED UPON DELIVERY IN THE FIELD TO ENSURE PROPER WORKING ORDER AND DAMAGE TO PROTECTIVE COATINGS BEFORE INSTALLATION AND SHALL BE FREE OF ALL RUST AND DIRT. THEY SHALL BE SET AND JOINTED TO THE PIPE IN THE MANNER AS SET FORTH IN THE AWWA STANDARDS FOR THE TYPE OF CONNECTING ENDS FURNISHED. NO VALVES SHALL BE LOCATED IN SUCH POSITION AS TO PLACE THE VALVE CHAMBER OR BOX IN ANY ROADSIDE DITCH, DRAINAGE DITCH, OR CHANNEL.

GATE VALVES SHALL BE USED ON ALL 4-INCH TO 12-INCH LINES, UNLESS DEPTH RESTRICTIONS NECESSITATE INSTALLATION OF BUTTERFLY VALVE. THE DESIGN, MATERIALS, AND WORKMANSHIP OF ALL GATE VALVES SHALL CONFORM TO EITHER AWWA C509-01 (OR LATEST REVISION) OR AWWA C515-01 (OR LATEST REVISION). GATE VALVES SHALL BE RESILIENT WEDGE NON-RISING STEM (NRS) WITH TWO INTERNAL O-RING STEM SEALS.

BUTTERFLY VALVES SHALL BE USED ON ALL LINES 14 INCHES AND LARGER UNLESS DESIGNATED BY THE CITY. BUTTERFLY VALVES SHALL CONFORM TO ANSI/AWWA C504, CLASS 150, WITH CAST IRON SHORT BODY AND "O" RING STEM SEAL. VALVES IN CHAMBERS SHALL HAVE A MANUAL CRANK OPERATION. BURIED VALVES SHALL HAVE A STEM EXTENSION WITH AWWA 2-INCH OPERATING NUT AND SUITABLE VALVE BOX.

VALVE BOXES:

ALL VALVES SHALL HAVE A STANDARD APWA CAST IRON WATER VALVE BOX SET TO GRADE WITH TWO-PIECE, EXTENSION TYPE CAST IRON RISER FROM VALVE. VALVE BOX SHALL HAVE A LUG TYPE COVER, 18" OR 8" TOP AND 24" BOTTOM PER THE STANDARD DETAIL. VALVE BOX LIDS SHALL HAVE THE WORD "WATER" CAST IN THE UPPER SURFACE AND THE VALVE BOX EARS SHALL BE SET IN DIRECTION OF FLOW.

IF VALVES ARE NOT SET IN PAVED AREA, A 2-FOOT BY 2-FOOT BY 4-INCH ASPHALT CONCRETE PAD SHALL BE SET AROUND EACH VALVE BOX AT FINISHED GRADE. IN AREAS WHERE VALVE BOX FALLS IN ROAD SHOULDER, THE DITCH AND SHOULDER SHALL BE GRADED BEFORE PLACING ASPHALT OR CONCRETE PAD. THE VALVE AND VALVE BOX SHALL BE SET PLUMB WITH THE VALVE BOX CENTERED ON THE OPERATOR NUT. VALVE BOXES SHALL BE SET FLUSH IN PAVEMENT OR ROAD SHOULDER. SEE STANDARD DETAILS.

OPERATING VALVE NUT EXTENSION. A VALVE STEM EXTENSION SHALL BE INSTALLED WHENEVER THE VALVE OPERATING NUT IS MORE THAN 3 FEET BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF 1 FOOT WITH ONLY ONE EXTENSION PER VALVE. THE OPERATOR NUT EXTENSION SHALL EXTEND INTO THE TOP SECTION OF THE VALVE BOX AND SHALL CLEAR THE BOTTOM OF THE LID BY A MINIMUM OF 10 INCHES. SEE STANDARD DETAILS.

CITY'S SERVICE CONNECTIONS:

ALL SERVICE CONNECTIONS RELATING TO NEW DEVELOPMENT SHALL BE INSTALLED BY THE DEVELOPER AT THE TIME OF MAINLINE CONSTRUCTION. AFTER THE LINES HAVE BEEN CONSTRUCTED, TESTED, APPROVED, AND A LETTER OF ACCEPTANCE HAS BEEN ISSUED, THE OWNER MAY APPLY FOR A WATER METER. THE CITY WILL INSTALL A WATER METER AFTER THE APPLICATION HAS BEEN MADE AND ALL APPLICABLE FEES HAVE BEEN PAID. WATER METERS WILL BE SET ONLY AFTER THE SYSTEM IS INSPECTED AND APPROVED.

WHEN WATER IS DESIRED TO A PARCEL FRONTING AN EXISTING MAIN, BUT NOT SERVED BY AN EXISTING METER, AN APPLICATION MUST BE MADE TO THE CITY. UPON APPROVAL OF THE APPLICATION AND PAYMENT OF ALL APPLICABLE FEES, THE CITY WILL ALLOW TAPPING OF THE MAIN, AND INSTALLATION OF THE METER, BOX, AND SETTER.

CORPORATION STOP SHALL BE ALL BRONZE ALLOY AND SHALL BE FORD, MUELLER, OR APPROVED EQUAL IN ACCORDANCE WITH AWWA STANDARD C800 WITH IRON PIPE THREAD (IP) THREAD INLET BY COMPRESSION FITTING OUTLET FOR HI-MOL PLASTIC, CL 200 (IPS) .

CORPORATION STOPS FOR 1-INCH TAPS SHALL BE BALL VALVE TYPE WITH I.P. INLET AND COMPRESSION OUTLET. CORPORATION STOPS FOR 1-1/2-INCH AND 2-INCH TAPS SHALL BE THE BALL VALVE TYPE WITH I.P. THREAD INLET AND OUTLET.

ALL JOINTS WITH PLASTIC PIPE SHALL BE MADE UTILIZING STAINLESS STEEL INSERTS WITH COUPLINGS OR ADAPTERS.

SERVICE CONNECTIONS FOR ANY SERVICE SHALL BE INSTALLED WITH ROMAC OR APPROVAL EQUAL PIPE SADDLES. THE MINIMUM ACCEPTABLE TAP SIZE SHALL BE 1 INCH.

SERVICE SADDLE SHALL BE ROMAC 202BS, ALL BRONZE WITH STAINLESS STRAPS AND (IP) THREAD OR APPROVED EQUAL. ALL CLAMPS SHALL HAVE RUBBER GASKET AND IRON PIPE THREADED OUTLETS.

SERVICE LINES SHALL BE POLYETHYLENE MEETING THE REQUIREMENTS OF AWWA C901, WITH HIGH MOLECULAR MASS WITH AT LEAST 200 PSI RATING, AND HAVE A 16 GAUGE COPPER TRACER WIRE WRAPPED ALONG ITS ENTIRE LENGTH (ONE WRAP PER FOOT).

3/4" AND 1" POLYETHYLENE TUBING SHALL BE IRON PIPE SIZE (IPS) - ID ASTM D2239 - SIDR 7 (PE 3408).

METER SETTER. METER SETTERS (1 INCH AND SMALLER) SHALL BE 12 INCHES IN HEIGHT WITH HORIZONTAL INLET AND OUTLET, DOUBLE PURPOSE COUPLINGS, UNLESS OTHERWISE SPECIFIED, ANGLE BALL VALVE WITH DRILLED WINGS FOR PADLOCK, AND ANGLE CHECK VALVE FOR THE SIZE METER TO BE INSTALLED, PER THE STANDARD DETAIL.

METER BOX. MID-STATES HDPE METER BOX SHALL BE COMPLETE WITH LID AS SPECIFIED IN THE STANDARD DETAILS.

ANY PLUMBING IN A RESIDENTIAL OR NONRESIDENTIAL FACILITY PROVIDING WATER FOR HUMAN CONSUMPTION, WHICH IS CONNECTED TO A PUBLIC WATER SYSTEM, SHALL BE LEAD FREE. WITH RESPECT TO SOLDERS AND FLUX, LEAD FREE SHALL MEAN NO MORE THAN 0.2% LEAD, AND WITH RESPECT TO PIPES AND PIPE FITTINGS NO MORE THAN 8% LEAD.

TURN ON - NEW INSTALLATION FOR OWNER WHEN NEW WATER SERVICE CONNECTIONS ARE INSTALLED BY THE CITY OR DEVELOPER'S CONTRACTOR FOR ANY PREMISES THE VALVE AT THE METER SHALL BE TURNED TO THE "OFF" POSITION AND REMAIN OFF UNTIL A TURN-ON IS APPLIED FOR AND AN ORDER SHALL BE ISSUED BY THE CITY UPON WRITTEN APPLICATION THEREFORE BY THE OWNER OF THE PREMISES TO BE SUPPLIED AFTER INSPECTION AND APPROVAL BY THE CITY, AND AFTER THE CITY PLUMBING INSPECTOR HAS ISSUED A CERTIFICATE THAT ALL PROVISIONS OF THE APPLICABLE PLUMBING CODE HAVE BEEN COMPLIED WITH.

OWNER'S SERVICE PIPE SPECIFICATIONS:

ALL WATER SERVICE LINE PIPING LEADING FROM THE METER TO THE PREMISES, SHALL BE LAID NOT LESS THAN 18 INCHES BELOW THE SURFACE OF THE GROUND. WATER SERVICE LINE PIPES OR ANY UNDERGROUND WATER PIPES SHALL NOT BE LAID IN THE SAME TRENCH WITH BUILDING SEWER OR DRAINAGE PIPING. WATER SERVICE LINE PIPES, PARALLEL TO BUILDING SEWERS OR DRAINAGE PIPING, SHALL NORMALLY BE ABOVE AND SEPARATED BY A DISTANCE OF AT LEAST TEN FEET HORIZONTALLY, UNLESS OTHERWISE APPROVED BY THE CITY.

SHUTOFF VALVES OF APPROVED FULL-FLOW PATTERN WITH KEY OR HAND WHEEL SHALL BE INSTALLED IN THE WATER SERVICE PIPE LEADING FROM THE CITY METER TO THE BUILDING, WITHIN THE PREMISES SERVED, IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODE. SHUTOFF VALVES WHERE BURIED SHALL BE PROPERLY ENCLOSED IN A MINIMUM SIX-INCH DIAMETER PIPE, OR BOX, OF CONCRETE, PLASTIC, OR IRON WITH AN APPROVED COVER, PROTECTED FROM FREEZING AND READILY ACCESSIBLE. VALVES INTERNAL TO THE STRUCTURE ARE RECOMMENDED.

CUSTOMER-OWNED VALVES OR EQUIPMENT ARE NOT PERMITTED TO BE INSTALLED WITHIN THE CITY'S METER BOX.

SERVICE CONNECTIONS AND EXTENSION PIPES LAID UNDERGROUND SHALL BE SIZED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE IBC AS ADOPTED BY THE CITY.

OWNER'S PLUMBING SPECIFICATIONS
ALL PERSONS INSTALLING FIXTURES OR APPLIANCES TO BE SUPPLIED WITH WATER FROM THE CITY SYSTEM SHALL BE SUBJECT TO THE REQUIREMENTS OF THE APPLICABLE PLUMBING CODE OF THE CITY. PERSONS INSTALLING PLUMBING IN NEW BUILDINGS SHALL LEAVE THE VALVE AT THE METER IN THE OFF POSITION UPON COMPLETION OF THEIR WORK. THE CITY SHALL HAVE THE RIGHT TO REFUSE WATER SERVICE OR DISCONTINUE WATER SERVICE IN ANY SITUATION WHERE IT IS DISCOVERED THAT APPLICABLE CITY STANDARDS AND CODES HAVE NOT BEEN COMPLIED WITH IN MAKING THE INSTALLATION.

IRRIGATION SYSTEM SPECIFICATIONS:

AN IRRIGATION SYSTEM CONNECTED TO A DOMESTIC, OR COMMERCIAL CONNECTION SHALL BE EQUIPPED WITH AN APPROVED BACKFLOW DEVICE PER APPENDIX A AND THE WSDOH LIST OF APPROVED CROSS CONNECTION CONTROL DEVICES. THE APPROVED DEVICE SHALL BE PLACED AT A HEIGHT AS PROVIDED IN THE APPLICABLE PLUMBING CODE

BLOWOFF ASSEMBLY:

IF A FIRE HYDRANT IS NOT LOCATED AT THE END OF A DEAD END MAIN, A BLOWOFF ASSEMBLY SHALL BE REQUIRED. ON WATER MAINS WHICH WILL BE EXTENDED IN THE FUTURE, PROVIDE TEE AND BLOCKING AS SHOWN ON STANDARD DETAILS.

CONCRETE BEDDING AND BLOCKING:

BEDDING, BLOCKING, ENCASEMENT, OR SLOPE ANCHOR CONCRETE SHALL BE PREMIXED BAGS OF CONCRETE OR CONCRETE MIXED FROM MATERIALS ACCEPTABLE TO THE ENGINEER AND SHALL HAVE A 30-DAY COMPRESSIVE STRENGTH OF NOT LESS THAN 2,500 PSI. THE MIX SHALL CONTAIN FIVE SACKS OF CEMENT PER CUBIC YARD AND SHALL BE OF SUCH CONSISTENCY THAT THE SLUMP IS BETWEEN 1 INCH AND 5 INCHES. ALL CONCRETE SHALL BE MIXED PRIOR TO INSTALLATION.

CONCRETE THRUST BLOCKING, AS INDICATED ON THE STANDARD DETAILS, SHALL BE PLACED AT BENDS, TEES, DEAD ENDS, CROSSES, AND AS DESIGNATED BY THE ENGINEER.

LOCATION OF THRUST BLOCKING SHALL BE SHOWN ON PLANS. THRUST BLOCK CONCRETE SHALL BE POURED AGAINST UNDISTURBED EARTH. A PLASTIC BARRIER SHALL BE PLACED BETWEEN ALL THRUST BLOCKS AND FITTINGS. SEE STANDARD DETAILS FOR THRUST BLOCK LOCATIONS AND CALCULATIONS. ALL BLOCKING AS SHOWN ON THE STANDARD DETAILS ARE CONSIDERED AS MINIMUMS, AND CONSIDERATION SHALL BE GIVEN TO UNUSUAL CIRCUMSTANCES SUCH AS UNSTABLE SOIL, ADJACENT PIPE LINES, AND TOPOGRAPHY.

BACKFLOW PREVENTION:

ALL WATER SYSTEM CONNECTIONS TO SERVE BUILDINGS OR PROPERTIES WITH DOMESTIC POTABLE WATER, FIRE SPRINKLER SYSTEMS, OR IRRIGATION SYSTEMS SHALL COMPLY WITH THE MINIMUM BACKFLOW REQUIREMENTS AS ESTABLISHED BY THE DEPARTMENT OF HEALTH (DOH) AND THE CITY.

WHEN UTILITY SERVICES OCCUPY THE SAME SPACE AS THE NEW WATER MAIN, THE CONTRACTOR SHALL DO ALL NECESSARY EXCAVATION TO FULLY EXPOSE SUCH SERVICES. THE CONTRACTOR SHALL PROTECT SAID SERVICES AND WORK AROUND THEM DURING EXCAVATING AND PIPE LAYING OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE SERVICES DUE TO HIS OPERATION AND SHALL IMMEDIATELY NOTIFY THE CITY AND OTHER UTILITY AND ARRANGE FOR REPLACEMENT OF ALL DAMAGED SERVICES.

THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION AND 10 FEET OF HORIZONTAL SEPARATION BETWEEN SANITARY SEWERS AND WATER MAINS. THE MINIMUM COVER FOR WATER MAIN OF 42 INCHES MAY BE REDUCED TO 30 INCHES UPON APPROVAL BY THE CITY TO PROVIDE FOR AS MUCH VERTICAL SEPARATION AS POSSIBLE.

THE LONGEST STANDARD LENGTH OF WATER PIPE SHALL BE INSTALLED SO THAT THE JOINTS WILL FALL EQUIDISTANT FROM ANY SEWER CROSSING. IN SOME CASES WHERE MINIMUM SEPARATION CANNOT BE MAINTAINED, IT MAY BE NECESSARY TO ENCASE THE WATER PIPE AND/OR SEWER SERVICE IN A CARRIER PIPE OR CONTROL DENSITY FILL. NO CONCRETE SHALL BE INSTALLED UNLESS SPECIFICALLY DIRECTED BY THE CITY.

ALL SURVEYING AND STAKING SHALL BE PERFORMED BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK. THE ENGINEER OR SURVEYOR DIRECTING SUCH WORK SHALL BE LICENSED AS A PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR BY THE STATE OF WASHINGTON.

A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE CITY PRIOR TO COMMENCING STAKING. ALL CONSTRUCTION STAKING SHALL BE INSPECTED BY THE CITY PRIOR TO CONSTRUCTION.

THE MINIMUM STAKING OF WATERLINES SHALL BE AS DIRECTED BY THE CITY OR AS FOLLOWS:

STAKE CENTERLINE ALIGNMENT EVERY 50 FEET WITH CUT OR FILL TO INVERT OF PIPE MAINTAINING 42 INCHES OF COVER OVER PIPE. CUTS ARE NORMALLY NOT REQUIRED WHEN ROAD GRADE HAS BEEN BUILT TO SUBGRADE ELEVATION.

STAKE ALIGNMENT OF ALL FIRE HYDRANTS, TEES, WATER METERS, SETTERS AND OTHER FIXTURES AND MARK CUT OR FILL TO HYDRANT FLANGE FINISHED GRADE.

MINIMUM COVER:

MINIMUM COVER FOR ALL WATER MAINS FROM TOP OF PIPE TO FINISH GRADE SHALL BE 36 INCHES FOR ALL PIPES 8 INCHES DIAMETER AND SMALLER, AND 48 INCHES FOR ALL PIPES GREATER THAN 8 INCHES DIAMETER, AND MAXIMUM DEPTH OF 60 INCHES, UNLESS OTHERWISE APPROVED BY THE CITY.

THE INSTALLATION OF ALL WATER MAINS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS AS APPROVED BY THE CITY FOR THE PROJECT. ANY DEVIATION OR CHANGES ARE TO BE APPROVED BY THE CITY BEFORE THE CHANGES ARE INCORPORATED INTO THE WORK.

DIRT OR OTHER FOREIGN MATERIAL SHALL BE PREVENTED FROM ENTERING THE PIPE OR PIPE JOINT DURING HANDLING OR LAYING OPERATIONS, AND ANY PIPE OR FITTING THAT HAS BEEN INSTALLED WITH DIRT OR FOREIGN MATERIAL IN IT SHALL BE REMOVED, CLEANED, AND RE-LAID. WHEN PIPE LAYING IS NOT IN PROGRESS, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY WATERTIGHT PLUGS OR BY OTHER MEANS APPROVED BY THE CITY.

PIPE SHALL BE STACKED IN SUCH A MANNER AS TO PREVENT DAMAGE TO THE PIPE, TO PREVENT DIRT AND DEBRIS FROM ENTERING THE PIPE, AND TO PREVENT ANY MOVEMENT OF THE PIPE. THE BOTTOM TIERS OF THE STACK SHALL BE KEPT OFF THE GROUND ON TIMBERS, OR OTHER SIMILAR SUPPORTS.

CUTTING PIPE - WHENEVER IT BECOMES NECESSARY TO CUT A LENGTH OF PIPE, THE CUT SHALL BE MADE BY ABRASIVE SAW OR BY PIPE CUTTER. ALL PIPE ENDS SHALL BE SQUARE WITH THE LONGITUDINAL AXIS OF THE PIPE AND THE OUTSIDE SHALL BE BEVELED AND OTHERWISE SMOOTHED SO THAT GOOD CONNECTIONS CAN BE MADE WITHOUT DAMAGE TO THE GASKET. THREADS SHALL BE CLEANLY CUT. OXYACETYLENE TORCH CUTTING OF DUCTILE IRON WILL NOT BE ALLOWED.

PIPE BEDDING:

PIPE BEDDING MATERIAL, SHALL BE CRUSHED SURFACING TOP COURSE CSTC PER WSDOT STD. SPEC. SECTION 9-03.9(3). BEDDING IS DEFINED AS 6 INCHES BELOW THE PIPE, AROUND THE PIPE, AND 12 INCHES ABOVE THE PIPE.

THE AMOUNT OF DEFLECTION AT EACH PIPE JOINT WHEN PIPE IS LAID ON A HORIZONTAL OR VERTICAL CURVE SHALL NOT EXCEED HALF THE MANUFACTURER'S PRINTED MAXIMUM RECOMMENDED DEFLECTIONS. WHERE FIELD CONDITIONS REQUIRE DEFLECTION OR CURVES NOT ANTICIPATED IN THE DRAWINGS, THE ENGINEER WILL DETERMINE THE METHODS TO BE USED. WHEN RUBBER GASKETED PIPE IS LAID ON A CURVE, THE PIPE SHALL BE JOINTED IN A STRAIGHT ALIGNMENT AND THEN DEFLECTED TO THE CURVED ALIGNMENT. TRENCHES SHALL BE MADE WIDER ON CURVES FOR THIS PURPOSE.

HYDROSTATIC PRESSURE TESTS:

THE CITY OR ITS REPRESENTATIVE WILL INSPECT AND OBSERVE THE HYDROSTATIC TEST OF THE PIPE WITHIN 48 HOURS AFTER NOTIFICATION BY THE CONTRACTOR THAT A SECTION IS READY FOR INSPECTION AND TEST. THE CONTRACTOR SHALL CONTACT THE CITY AT LEAST 48 HOURS IN ADVANCE OF THE COMPLETION OF STERILIZATION AND FLUSHING AND THE CITY WILL TAKE THE REQUIRED WATER SAMPLES. THE CONTRACTOR SHALL PAY FOR THE COST OF THE WATER QUALITY TESTS.

PRIOR TO THE ACCEPTANCE OF THE WORK, THE INSTALLATION SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST AND ANY LEAKS OR IMPERFECTIONS DEVELOPING UNDER SAID PRESSURE SHALL BE REMEDIED BY THE CONTRACTOR BEFORE FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR SHALL PERFORM A PRELIMINARY TEST TO ASSURE THAT THE EQUIPMENT TO BE USED FOR THE TEST IS ADEQUATE AND IN GOOD OPERATING CONDITION AND THE AIR IN THE LINES HAS BEEN RELEASED BEFORE REQUESTING THE CITY WITNESS THE TEST. THE CITY OR HIS REPRESENTATIVE SHALL WITNESS THE TEST; IF THE TEST DOES NOT PASS INSPECTION FOR ANY REASON, ADDITIONAL TRIPS REQUIRED TO WITNESS THE TEST SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

NO AIR WILL BE ALLOWED IN THE LINES. THE MAINS SHALL BE TESTED BETWEEN VALVES. INSOFAR AS POSSIBLE, NO HYDROSTATIC PRESSURE SHALL BE PLACED AGAINST THE OPPOSITE SIDE OF THE VALVE BEING TESTED. TEST PRESSURE SHALL BE MAINTAINED WHILE THE ENTIRE INSTALLATION BEING TESTED IS INSPECTED. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT AND SHALL PERFORM ALL WORK CONNECTED WITH THE TEST. TESTS SHALL BE MADE BEFORE ALL VALVED CONNECTIONS HAVE BEEN MADE. AT UNVALVED CONNECTION POINTS, A TEMPORARY PLUG (OR 2" BLOW-OFF ASSEMBLY ON LINES WITHOUT HYDRANTS) SHALL BE INSTALLED AT THE END OF THE NEW MAIN. THIS SHALL INCLUDE CONCRETE BLOCKING AND/OR RESTRAINED JOINTS NECESSARY TO WITHSTAND PRESSURES ENCOUNTERED DURING THE HYDROSTATIC TEST.

ONCE THE NEW LINE IS SUCCESSFULLY TESTED AND DISINFECTED, THE PLUG (BLOW-OFF) SHALL BE REMOVED AND THE CONNECTION TO THE EXISTING MAIN COMPLETED.

THE CONTRACTOR SHALL PROVIDE SPECIAL PLUGS AND BLOCKING NECESSARY IN THOSE LOCATIONS WHERE IT WOULD BE NECESSARY TO TEST AGAINST BUTTERFLY VALVES TO ENSURE THAT THE PRESSURE RATING OF THESE VALVES IS NOT EXCEEDED DURING TESTING.

ALL WATER MAINS AND APPURTENANCES SHALL BE HYDROSTATICALLY TESTED AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

STERILIZATION AND FLUSHING OF WATER MAINS:

STERILIZATION OF WATER MAINS SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE HEALTH DEPARTMENT AND IN A MANNER SATISFACTORY TO THE CITY. THE SECTION TO BE STERILIZED SHALL BE THOROUGHLY FLUSHED AT MAXIMUM FLOW ESTABLISHED BY THE CITY PRIOR TO CHLORINATION, NO LESS THAN 2.5 FT/S. FLUSHING PERIOD MUST BE APPROVED BY THE CITY. SECTIONS WILL ORDINARILY BE STERILIZED BETWEEN ADJACENT VALVES UNLESS, IN THE OPINION OF THE CITY, A LONGER SECTION MAY BE SATISFACTORILY HANDLED. CHLORINE SHALL BE APPLIED BY SOLUTION FEED AT ONE END OF THE SECTION WITH A VALVE OR HYDRANT AT THE OPPOSITE END OPEN SUFFICIENTLY TO PERMIT A FLOW THROUGH DURING CHLORINE APPLICATION. THE CHLORINE SOLUTION SHALL BE FED INTO THE PIPELINE ALREADY MIXED BY AN AUTOMATICALLY PROPORTIONING APPLICATOR SO AS TO PROVIDE A STEADY APPLICATION RATE OF NOT LESS THAN 50 PPM CHLORINE. HYDRANTS ALONG THE CHLORINATED SECTION SHALL BE OPEN DURING APPLICATION UNTIL THE PRESENCE OF CHLORINE HAS DEFINITELY BEEN DETECTED IN EACH HYDRANT RUN. WHEN A CHLORINE CONCENTRATION OF NOT LESS THAN 50 PPM HAS BEEN ESTABLISHED THROUGHOUT THE LINE, THE VALVES SHALL BE CLOSED AND THE LINE LEFT UNDISTURBED FOR 24 HOURS MINIMUM CONTACT TIME.

AS AN ALTERNATIVE, THE CONTRACTOR MAY USE GRANULATED CHLORINE. GRANULATED CHLORINE (DRY CALCIUM HYPOCHLORITE AT 65% - 70% CHLORINE) SHALL BE PLACED IN THE PIPE TO YIELD A DOSAGE OF NOT LESS THAN 50 PPM. THE NUMBER OF OUNCES OF 65% TEST CALCIUM HYPOCHLORITE REQUIRED FOR A 20-FOOT LENGTH OF PIPE EQUALS .00843LD, IN WHICH "D" IS THE DIAMETER IN INCHES. THE LINE SHALL THEN BE THOROUGHLY FLUSHED AND WATER SAMPLES TAKEN FOR APPROVAL BY THE LOCAL HEALTH AGENCY. FLUSHING PERIOD MUST BE APPROVED BY THE CITY. THE CONTRACTOR SHALL EXERCISE SPECIAL CARE IN FLUSHING TO AVOID DAMAGE TO SURROUNDING PROPERTY.

SHOULD THE INITIAL TREATMENT RESULT IN AN UNSATISFACTORY BACTERIOLOGICAL TEST, ADDITIONAL CHLORINE USING THE FIRST PROCEDURE SHALL BE REPEATED BY THE CONTRACTOR UNTIL SATISFACTORY RESULTS ARE OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF TREATED WATER FLUSHED FROM MAINS AND AT NO TIME SHALL CHLORINATED WATER FROM A NEW MAIN BE FLUSHED INTO A BODY OF FRESH WATER. THIS IS TO INCLUDE LAKES, RIVERS, STREAMS, STORM DRAINAGE SYSTEMS AND ANY AND ALL OTHER WATERS WHERE FISH OR OTHER NATURAL WATER LIFE CAN BE EXPECTED.

DECHLORINATION OF THE TREATED WATER THAT IS FLUSHED FROM THE MAIN IS REQUIRED. ALLOWABLE CHEMICALS ARE ASCORBIC ACID OR OTHER CHEMICAL IF APPROVED BY THE CITY.

MAIN EXTENSIONS SHALL NOT BE CONNECTED TO THE CITY WATER SYSTEM UNTIL PRESSURE AND BACTERIOLOGICAL TESTS HAVE PASSED ALL REQUIRED STANDARDS.

CHLORINE DOSAGE:

REFERENCES IN SECTION 7-09.3(24) OF THE WSDOT STANDARD SPECIFICATIONS TO AN INITIAL CHLORINE CONTENT OF THE WATER OF NOT LESS THAN 50 MG/L IS AS FOLLOWS.

THE AMOUNTS OF CHLORINE (CL2) REQUIRED TO PROVIDE 50 MG/L FOR 100-FOOT LENGTHS OF VARIOUS DIAMETER OF PIPE ARE:

AMOUNTS OF CHLORINE REQUIRED FOR 50 MG/L DOSAGE

PIPE SIZE (INCHES)	VOLUME OF WATER PER 100FT LENGTH (GALLONS)	HOUSEHOLD BLEACH 5-1/4% (GALLONS)	COMMERCIAL BLEACH 12-1/2% (GALLONS)
4	65.3	0.06	0.03
6	146.5	0.14	0.06
8	261.0	0.26	0.11
10	408.0	0.40	0.16
12	588.7	0.60	0.24

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein
Date: 2022.10.06 12:57:4...

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
GENERAL NOTES

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE:	9/30/2022
REV.	3
SHEET	4 OF 27

SHEET NUMBER
C04

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM

SCALE IN FEET (30 15 0 30 60)

KEY NOTES

KEY	DESCRIPTION	DETAIL/ SHEET
1	SIDEWALK ALIGNMENT AS SURVEYED ON 8/30/2021. AT TIME OF SURVEY NO CURB OR GUTTER WAS IN PLACE AS PART OF THE TOLT AVENUE CENTRAL BUSINESS DISTRICT CAPITAL IMPROVEMENT PROJECT SIDEWALK ALIGNMENT IS IN LINE WITH PROPOSED TOLT AVE FRONTAGE IMPROVEMENTS	-
2	ROADWAY IMPROVEMENTS INSTALLED BY OTHERS	-

NOTES

1) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR.

2) BOUNDARY LINES SHOWN AND CORNERS SET REPRESENT DEED LOCATIONS; OWNERSHIP LINES MAY VARY. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED. THIS SURVEY PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, AND OCCUPATION WHICH MAY ENCUMBER TITLE TO OR USE OF THIS PROPERTY.

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE

INSTRUMENTATION:
LEICA TS15 ROBOTIC ELECTRONIC TOTAL STATION

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS WAC 332-130-090

BASIS OF BEARING:
THE MONUMENTED CENTERLINE OF MCKINLEY AVE., AS THE BEARING OF N 00°14'00" W.

LEGAL DESCRIPTION

LOTS 1 THROUGH 10, BLOCK 7, REPLAT OF THE TOWN OF TOLT, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 20 OF PLATS, PAGE 45, RECORDS OF KING COUNTY, WASHINGTON.

TOGETHER WITH THAT PORTION OF VACATED MYRTLE STREET ADJOINING, WHICH, UPON VACATION, ATTACHES TO SAID PROPERTY BY OPERATION OF LAW.

SITUATE IN THE CITY OF CARNATION, COUNTY OF KING, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88
FOUND CASED CONC. MON. AT THE INTERSECTION OF E. EUGENE ST. AND MCKINLEY ST.
ELEV. = 80.24'
PER GPS OBSERVATIONS

LEGEND

SET 1/2" X 24" REBAR W/CAP STAMPED "PCS 37536"
EXISTING REBAR W/CAP, AS NOTED
SET NAIL AND WASHER STAMPED "PCS 37536"
EXISTING NAIL AND WASHER AS NOTED
FOUND CONCRETE MONUMENT AS NOTED
RIGHT OF WAY CENTERLINE
STORM DRAIN MANHOLE
INVERT/CULVERT
CATCH BASIN
WATER VALVE
FIRE HYDRANT
WATER METER
HOSE BIB
MONITOR WELL
GAS VALVE
YARD LIGHT
SANITARY SEWER MANHOLE
SEWER VALVE
SIGN POST
UTILITY/POWER POLE
GUY ANCHOR
CONIFEROUS TREE
DECIDUOUS TREE
F FIR
M MAPLE
H HOLLY
R REDWOOD
O OAK
W WALNUT

STORM TABLE

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein Date: 2022.10.08 12:68:09 -07'00'

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

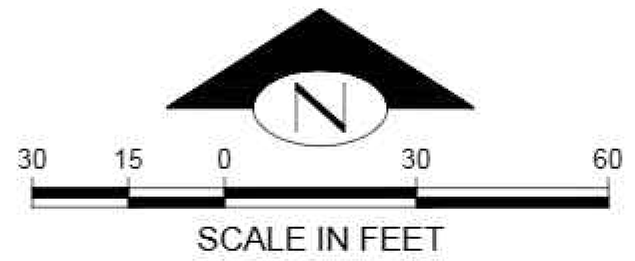
PROJECT: TOLT VILLAS
CARNATION, WA 98014
EXISTING CONDITIONS MAP

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 — SHEET 5 OF 27

SHEET NUMBER
C05

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



KEY NOTES:

KEY	NOTE:	DETAIL/ SHEET
SDI	INSTALL TEMPORARY INLET PROTECTION ON EX SD INLET OR INLETS DOWNSTREAM OF SITE	SDI/C23
CE	INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE (DESIGNATED SITE ACCESS POINT)	CE/C23
PP	INSTALL APPROX 1,211 LF PERIMETER PROTECTION*	PP/C23
VEG	TREE PROTECTION FENCING	VEG/C23
HVF	INSTALL HIGH VISIBILITY FENCING ALONG RIGHT-OF-WAY	-
SP	PROPOSED STOCKPILE LOCATION. CONTRACTOR TO DETERMINE FINAL LOCATION IN FIELD	SP/C23
SW	CONTRACTOR TO SWEEP STREET DAILY OR MORE OFTEN IF NECESSARY TO REMOVE TRACKED SEDIMENT	-
SA	SOIL AMENDMENT (TYP)	SA/C23
WW	WHEEL WASH	BMP C106
1	PROTECT EX SS STRUCTURE	-
2	PROTECT EX FIRE HYDRANT	-
3	PROTECT & AVOID ANY COMPACTION OF INFILTRATION BEDS DURING CONSTRUCTION. CONTRACTOR SHALL LEAVE THE FINAL EXCAVATION OF THE INFILTRATION FACILITIES UNTIL NEAR THE END OF CONSTRUCTION TO AVOID COMPACTION OF SUBGRADE	-
4	ADJUST TREE PROTECTION FENCING THROUGHOUT CONSTRUCTION TO ACCOMODATE PAVER INSTALLATION (TYP)	-
5	TEMPORARY SEDIMENT POND SURFACE AREA: 592 SF ASSUME 2H:1V MAX SIDE SLOPES IF FENCING IS PROVIDED AT TOP OF EMBANKMENT ASSUME LENGTH-TO-WIDTH RATIO BETWEEN 3:1 AND 6:1 (TYP)	-
6	TEMPORARY INTERCEPTOR SWALE LOCATION SHOWN ON THIS SHEET IS SCHEMATIC & SUBJECT TO CHANGE BY CONTRACTOR DEPTH: 1' 1V:2H SIDE SLOPE MAX 5% SLOPE (TYP)	-
7	INSTALL TEMPORARY CULVERT UNDER STABILIZED CONSTRUCTION ACCESS (TYP)	-

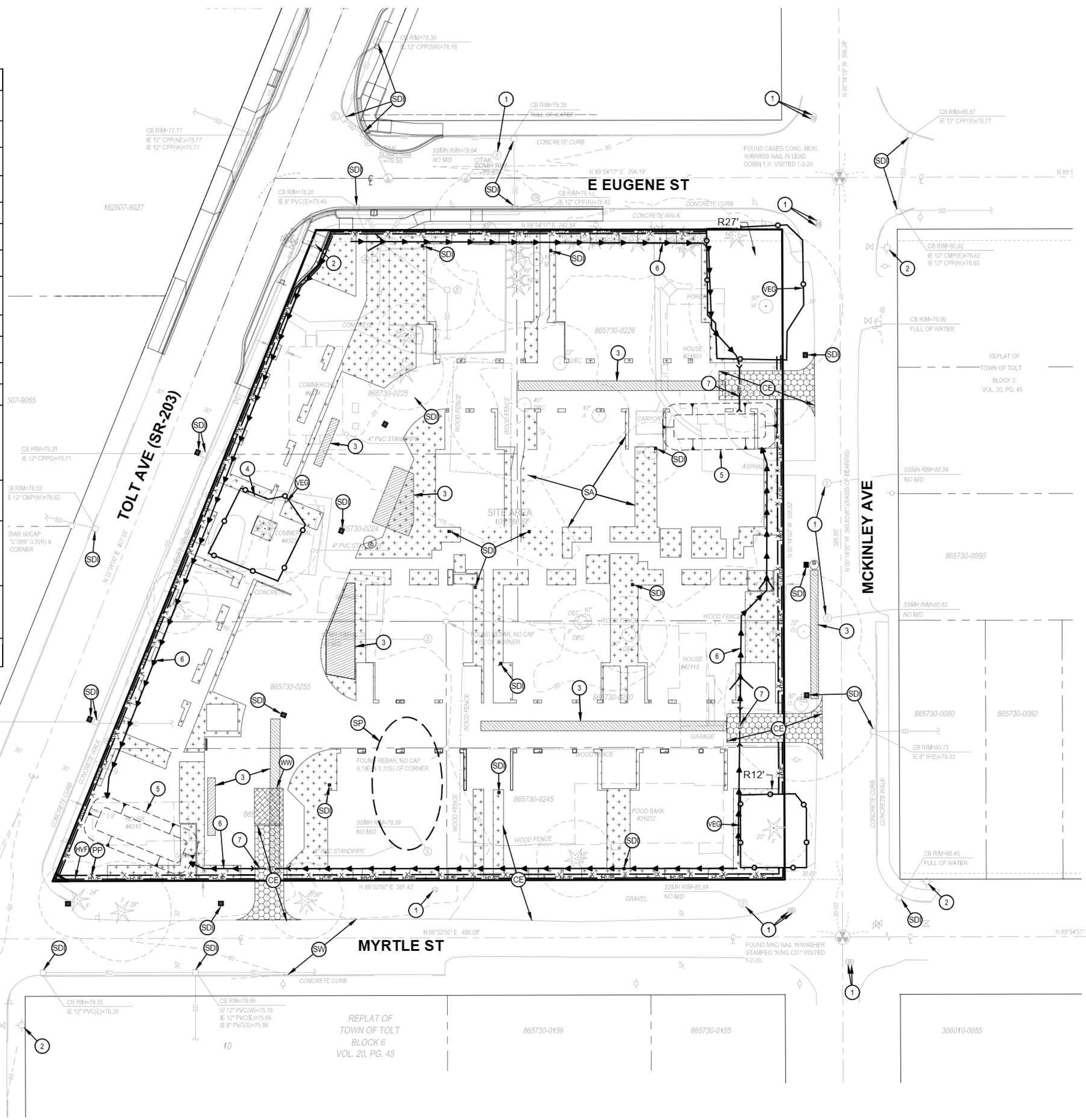
* INSTALL PERIMETER PROTECTION, SUCH AS SILT FENCING, COMPOST SOCKS, OR STRAW WATTLES IN ACCORDANCE WITH VOL II OF THE DOE STORMWATER DESIGN MANUAL.

DEMOLITION NOTES:

1. ALL STRUCTURES HAVE BEEN DEMOLISHED PRIOR TO CONSTRUCTION DUE TO SAFETY CONCERNS (UNDER SEPARATE PERMIT).
2. SEE SHEET C07 FOR DEMOLITION AND TREE REMOVAL WORK TO BE COMPLETED AFTER TESC MEASURES HAVE BEEN ESTABLISHED PER THIS PLAN.
3. DUST CONTROL (C140) TO BE USED AS NEEDED. MUD AND DIRT SHALL NOT BE TRACKED ONTO PUBLIC ROW.

LEGEND:

- STABILIZED CONSTRUCTION ENTRANCE
- PERIMETER PROTECTION
- HIGH VISIBILITY FENCING
- STOCKPILE LOCATION
- TREE PROTECTION FENCING
- PROPOSED INFILTRATION FACILITY
- SOIL AMENDMENT
- WHEEL WASH STATION



NOTES

1) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR.

2) BOUNDARY LINES SHOWN AND CORNERS SET REPRESENT DEED LOCATIONS; OWNERSHIP LINES MAY VARY. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED. THIS SURVEY PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, AND OCCUPATION WHICH MAY ENCUMBER TITLE TO OR USE OF THIS PROPERTY.

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE

INSTRUMENTATION:
LEICA TS15 ROBOTIC ELECTRONIC TOTAL STATION

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS WAC 332-130-090

BASIS OF BEARING:
THE MONUMENTED CENTERLINE OF MCKINLEY AVE., AS THE BEARING OF N 00°14'00" W.

LEGAL DESCRIPTION

LOTS 1 THROUGH 10, BLOCK 7, REPLAT OF THE TOWN OF TOLT, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 20 OF PLATS, PAGE 45, RECORDS OF KING COUNTY, WASHINGTON.

TOGETHER WITH THAT PORTION OF VACATED MYRTLE STREET ADJOINING, WHICH, UPON VACATION, ATTACHES TO SAID PROPERTY BY OPERATION OF LAW.

SITUATE IN THE CITY OF CARNATION, COUNTY OF KING, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88
FOUND CASED CONC. MON. AT THE INTERSECTION OF E. EUGENE ST. AND MCKINLEY ST.
ELEV. = 80.34'
PER GPS OBSERVATIONS

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein Date: 2022.10.05 12:58:22 -07'00'

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
TEMPORARY EROSION CONTROL PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET	6 OF 27

SHEET NUMBER
C06

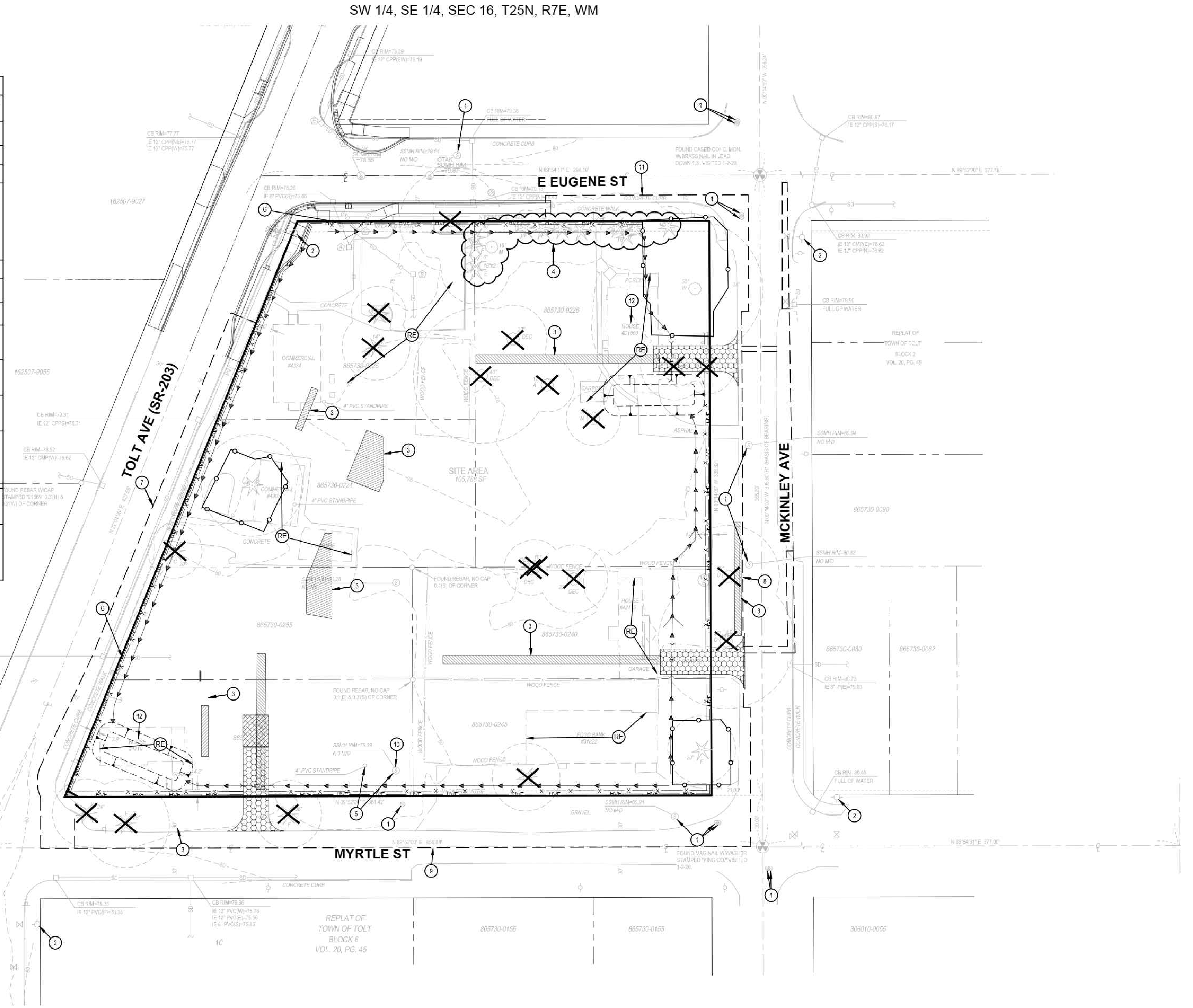
CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM

30 15 0 30 60
SCALE IN FEET

KEY NOTES:

KEY	NOTE:	DETAIL/ SHEET
RE	ALL EX ONSITE HARD SURFACES TO BE REMOVED UNLESS OTHERWISE NOTED	-
1	PROTECT EX SS STRUCTURE	-
2	PROTECT EX FIRE HYDRANT	-
3	PROTECT & AVOID ANY COMPACTION OF INFILTRATION BEDS DURING CONSTRUCTION. CONTRACTOR SHALL LEAVE THE FINAL EXCAVATION OF THE INFILATRATION FACILITIES UNTIL NEAR THE END OF CONSTRUCTION TO AVOID COMPACTION OF SUBGRADE	-
4	CLUSTER OF TREES TO BE REMOVED	-
5	LOCATE, CUT, AND CAP EX SSS AT PROPERTY LINE	-
6	LOCATE, CUT, AND CAP EX SD AT PROPERTY LINE	-
7	SAWCUT AT TOLT AVE 3.0' FROM FACE OF CURB AND REMOVE EX ASPH, CONC CURB, GUTTER & WALK EAST OF SAWCUT	-
8	SAWCUT AT MCKINLEY AVE 11.0' FROM R.O.W. CENTERLINE AND REMOVE EX ASPH WEST OF SAWCUT (2'±)	-
9	SAWCUT AT MYRTLE AVE AT R.O.W. CENTERLINE AND REMOVE EX ASPH NORTH OF SAWCUT (10'±)	-
10	DEMOLITION PROCEDURE OF EXISTING ONSITE VACUUM SEWER VALVE PIT TO BE PREPARED BY ONSITE CONTRACTOR FOR CITY REVIEW IN ACCORDANCE WITH KING COUNTY HEALTH DEPARTMENT REQUIREMENTS (TYP)	-
11	SAWCUT AT E EUGENE ST 12.0' FROM R.O.W. CENTERLINE AND REMOVE EX ASPH SOUTH OF SAWCUT (4'±)	-
12	CONTRACTOR TO LOCATE EX SEPTIC TANK AND DRAIN FIELD PRIOR TO CONSTRUCTION ACTIVITIES. SEPTIC TANK AND DRAINFIELD TO BE DECOMMISSIONED IN ACCORDANCE WITH HEALTH DEPARTMENT REQUIREMENTS	-



LEGEND:

- STABILIZED CONSTRUCTION ENTRANCE (SEE SHEET C06)
- PERIMETER PROTECTION (SEE SHEET C06)
- HIGH VISIBILITY FENCING (SEE SHEET C06)
- STOCKPILE LOCATION (SEE SHEET C06)
- TREE PROTECTION FENCING (SEE SHEET C06)
- TREE REMOVAL
- PROPOSED INFILTRATION FACILITY
- WHEEL WASH STATION

DEMOLITION NOTES:

1. ALL STRUCTURES HAVE BEEN DEMOLISHED PRIOR TO CONSTRUCTION DUE TO SAFETY CONCERNS (UNDER SEPARATE PERMIT)

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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Digitally signed Tim Gabelein 2022.10.05

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

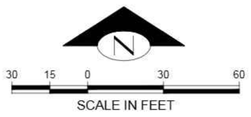
PROJECT: TOLT VILLAS
CARNATION, WA 98014
DEMOLITION PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 · SHEET 7 OF 27

SHEET NUMBER
C07

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



KEY NOTES

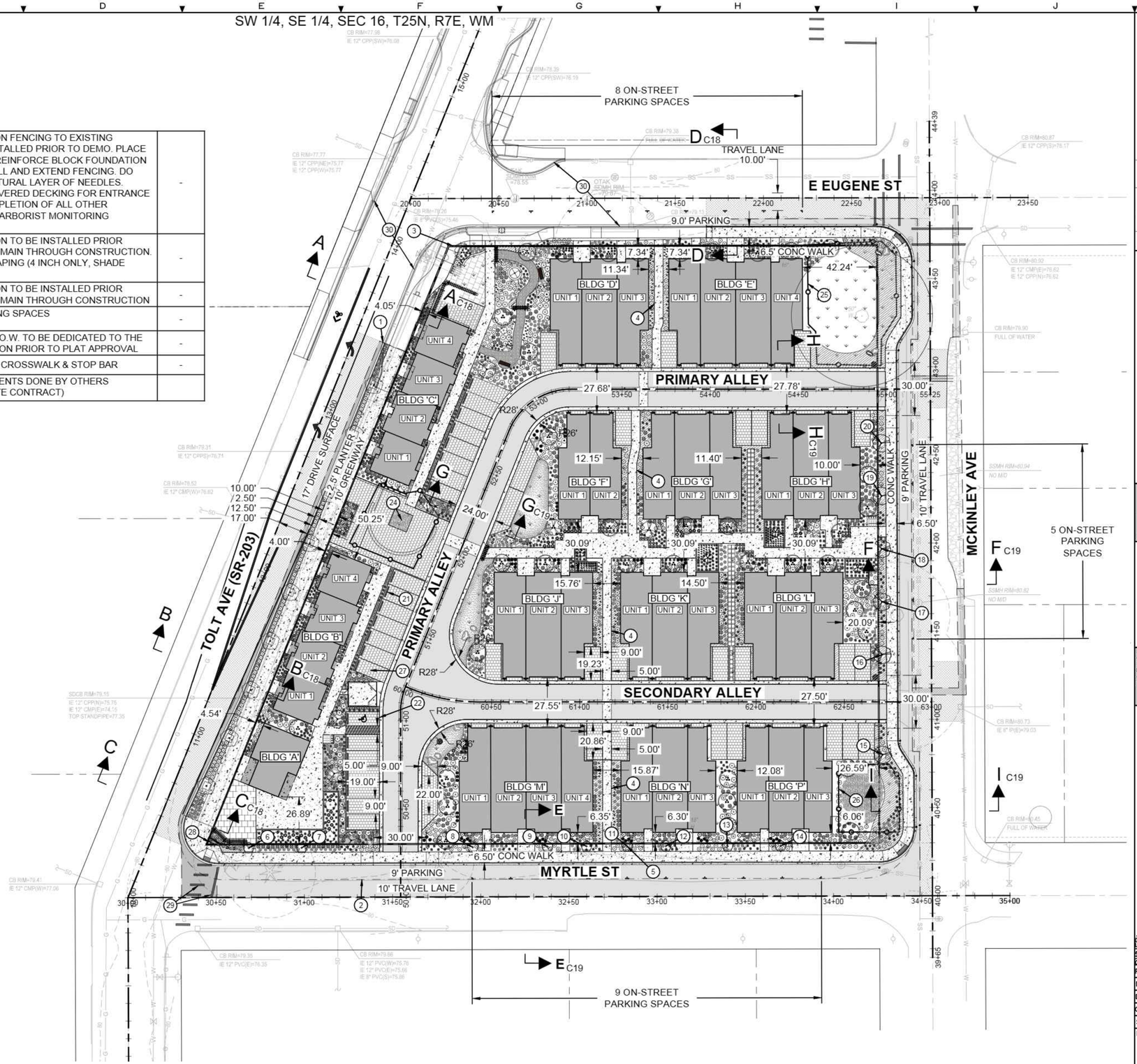
KEY	DESCRIPTION	DETAIL/ SHEET
1	MATCH PROPOSED IMPROVEMENTS FROM THE OTAK DESIGNED TOLT AVE CAPITAL IMPROVEMENT PROJECT (CENTRAL BUSINESS DISTRICT IMPROVEMENTS)	-
2	EDGE OF TRAVEL LANE (TYP)	-
3	PRIOR TO CONSTRUCTION, CONFIRM EX ACCESS EASEMENT PER TOLT AVE CENTRAL BUSINESS DISTRICT IMPROVEMENTS	-
4	5' WIDE PEDESTRIAN PATHWAYS INTERNAL TO SITE (TYP)	-
5	PROPOSED STREET TREE. SIZE AND TYPE BY LANDSCAPE ARCHITECT. SPECIES TO COMPLY WITH APPROVED STREET TREE LIST (TYP)	-
6	NEW STREET TREE W/ ROOT BARRIER STA 30+68.6, 28.0' LT	-
7	NEW STREET TREE W/ ROOT BARRIER STA 30+98.6, 28.0' LT	-
8	NEW STREET TREE W/ ROOT BARRIER STA 31+95.79, 28.0' LT	-
9	NEW STREET TREE W/ ROOT BARRIER STA 32+37.85, 28.0' LT	-
10	NEW STREET TREE W/ ROOT BARRIER STA 32+60.0, 28.0' LT	-
11	NEW STREET TREE W/ ROOT BARRIER STA 32+83.0, 28.0' LT	-
12	NEW STREET TREE W/ ROOT BARRIER STA 33+05.0, 28.0' LT	-
13	NEW STREET TREE W/ ROOT BARRIER STA 33+40.0, 28.0' LT	-
14	NEW STREET TREE W/ ROOT BARRIER STA 33+70.0, 28.0' LT	-
15	NEW STREET TREE W/ ROOT BARRIER STA 40+80.1, 28.0' LT	-
16	NEW STREET TREE W/ ROOT BARRIER STA 41+36.8, 28.0' LT	-
17	NEW STREET TREE W/ ROOT BARRIER STA 41+66.8, 28.0' LT	-
18	NEW STREET TREE W/ ROOT BARRIER STA 41+96.8, 28.0' LT	-
19	NEW STREET TREE W/ ROOT BARRIER STA 42+26.8, 28.0' LT	-
20	NEW STREET TREE W/ ROOT BARRIER STA 42+56.8, 28.0' LT	-
21	CURB WHEEL STOP (TYP)	-
22	1 ADA PARKING STALL	-
23	NOT USED	-
24	TREE PROTECTION FENCING TO EXISTING FOUNDATION INSTALLED PRIOR TO DEMO. PLACE ECOBLOCKS TO REINFORCE BLOCK FOUNDATION TO EAST, BACKFILL AND EXTEND FENCING. DO NOT REMOVE NATURAL LAYER OF NEEDLES. INSTALL CANTILEVERED DECKING FOR ENTRANCE FOLLOWING COMPLETION OF ALL OTHER CONSTRUCTION. ARBORIST MONITORING REQUIRED	-
25	TREE PROTECTION TO BE INSTALLED PRIOR TO DEMO AND REMAIN THROUGH CONSTRUCTION. LIMITED LANDSCAPING (4 INCH ONLY, SHADE NATIVES)	-
26	TREE PROTECTION TO BE INSTALLED PRIOR TO DEMO AND REMAIN THROUGH CONSTRUCTION	-
27	COMPACT PARKING SPACES 8'W X16'L	-
28	15.3 SF PUBLIC R.O.W. TO BE DEDICATED TO THE CITY OF CARNATION PRIOR TO PLAT APPROVAL	-
29	THERMOPLASTIC CROSSWALK & STOP BAR	-
30	ROAD IMPROVEMENTS DONE BY OTHERS (UNDER SEPARATE CONTRACT)	

GENERAL NOTES:

1. FOR DETAILED STREET SECTIONS SEE SHEET C18 & C19.
2. FOR LINE AND CURVE TABLES SEE SHEET C09.

LEGEND:

- ASPHALT PAVEMENT (FULL DEPTH SECTION)
- GRIND AND OVERLAY
- CONCRETE PAVEMENT
- CONCRETE WALK / PAD
- GRID / BLOCK PAVERS (ECO-PRIORA)
- BUILDING / ROOF AREAS
- LANDSCAPE / PLANTER AREAS
- PROPOSED EDGE TRAVEL LANE



REVISION	BY	DATE
REVISE STORMFILTER MH CONFIGURATION	TG	4/1/2021
REVISED PER CITY REVIEW COMMENTS	TG	7/7/2022
REVISED PER CITY REVIEW COMMENTS	TG	9/30/2022

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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — REGISTERED — Digitally Signed by Tim Gabelein — Date: 2022.10.06 12:59:06 -07'00'

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
SITE PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET	8 OF 27

SHEET NUMBER
C08

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS, CARNATION, DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.0" X 22.00 INCHES)
AUTOCAD VERSION: C3VL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM

SCALE IN FEET (0, 15, 30, 60)

LINE TABLE				
Line #	Length	Direction	Start Point	End Point
L1	105.044	N00° 00' 00.00"E	1373805.0491,237403.5196	1373805.0491,237508.5641
L2	156.297	N22° 01' 06.12"E	1373807.8206,237522.8104	1373866.4171,237667.7081
L3	203.759	N89° 59' 43.62"E	1373901.6425,237691.4617	1374105.4020,237691.4779
L4	3.642	S67° 58' 53.88"E	1373807.8206,237522.8104	1373811.1967,237521.4451
L5	257.437	N90° 00' 00.00"E	1373848.6871,237514.1515	1374106.1242,237514.1515

CURVE TABLE					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	38.000	14.603	N11° 00' 33.06"E	1373805.0491,237508.5641	1373807.8206,237522.8104
C2	38.000	45.084	N56° 00' 24.87"E	1373866.4171,237667.7081	1373901.6425,237691.4617
C3	100.000	38.429	S78° 59' 26.94"E	1373811.1967,237521.4451	1373848.6871,237514.1515

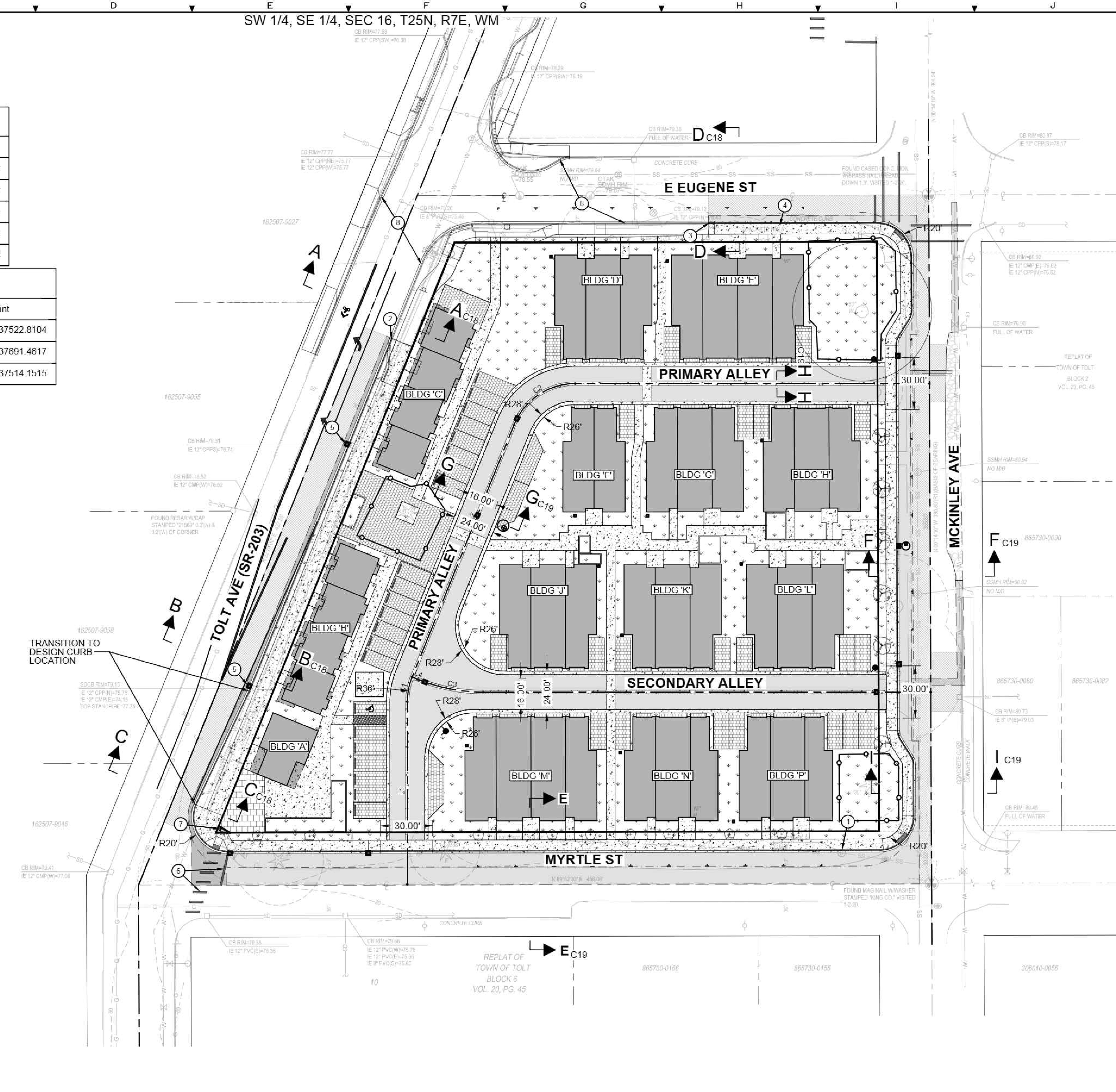
GENERAL NOTES:

1. FOR DETAILED STREET SECTIONS SEE SHEET C18 & C19.

KEY NOTES		
KEY	DESCRIPTION	DETAIL/ SHEET
1	ADJUST MANHOLE LID OR JOG CURB SUCH THAT LID IS OUTSIDE OF THE CURB FLANGE AND COMPLETELY WITHIN THE ASPHALT PAVED ROADWAY	-
2	BEGIN CURB, GUTTER AND CONC WALK IMPROVEMENTS ALONG TOLT AVE AT STA 13+45.87 (MATCH TO IMPROVEMENTS BY OTHERS)	-
3	END CURB, GUTTER AND CONC WALK IMPROVEMENTS ALONG E EUGENE ST AT STA 21+67.64 (MATCH TO EX FOC OR TO IMPROVEMENTS BY OTHERS)	-
4	CLAY BRICK PAVERS	Z4/C26
5	EX CB TO BE RELOCATED	C15
6	NEW THERMOPLASTIC STOP BAR & CROSSWALK	-
7	NEW DOUBLE SIDED STREET NAME SIGN	-
8	MATCH ROAD IMPROVEMENTS DONE BY OTHERS (UNDER SEPARATE CONTRACT	-

LEGEND:

- ASPHALT PAVEMENT (FULL DEPTH SECTION)
- GRIND AND OVERLAY
- CONCRETE PAVEMENT
- CONCRETE WALK / PAD
- GRID / BLOCK PAVERS (ECO-PRIORA)
- BUILDING / ROOF AREAS
- LANDSCAPE / PLANTER AREAS
- GRAVEL SHOULDER
- SAWCUT LINE
- PROPOSED EDGE TRAVEL LANE
- CATCH BASIN (TYPE 1)
- STORMFILTER TREATMENT MANHOLE
- GRAVEL SHOULDER
- ELEVATED SIDEWALK



REVISION			
No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
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TIMOTHY W. GABELEIN, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein Date: 2022.10.06 12:59:37 -07'00'

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

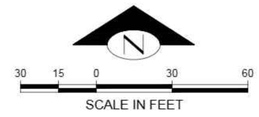
PROJECT: TOLT VILLAS
CARNATION, WA 98014
STREET IMPROVEMENT PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 / SHEET 9 OF 27

SHEET NUMBER
C09

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



KEY NOTES		
KEY	DESCRIPTION	DETAIL/ SHEET
1	GRADING AREA DETAIL	1/C20
2	GRADING AREA DETAIL	2/C20
3	GRADING AREA DETAIL	3/C20
4	GRADING AREA DETAIL	4/C20
5	GRADING AREA DETAIL	5/C20
6	GRADING AREA DETAIL	6/C20

KEY NOTES		
BUILDING UNIT LETTER DESIGNATION	BUILDING FINISHED FLOOR ELEVATION	GARAGE ENTRY ELEVATION
A	80.75	-
B	81.80	-
C	81.80	-
D	81.40	79.9
E	82.30	80.8
F	81.30	79.8
G	81.90	80.5
H	82.60	81.2
J	81.90	80.5
K	82.60	81.2
L	83.00	81.8
M	82.00	80.5
N	82.60	81.2
P	83.30	81.8

3

GENERAL NOTES:

1. FINAL FINISH BUILDING AND GARAGE GRADES ARE FOR REFERENCE ONLY AND ARE NOT APPROVED WITH THE CLEARING AND GRADING PERMIT APPLICATION.

3

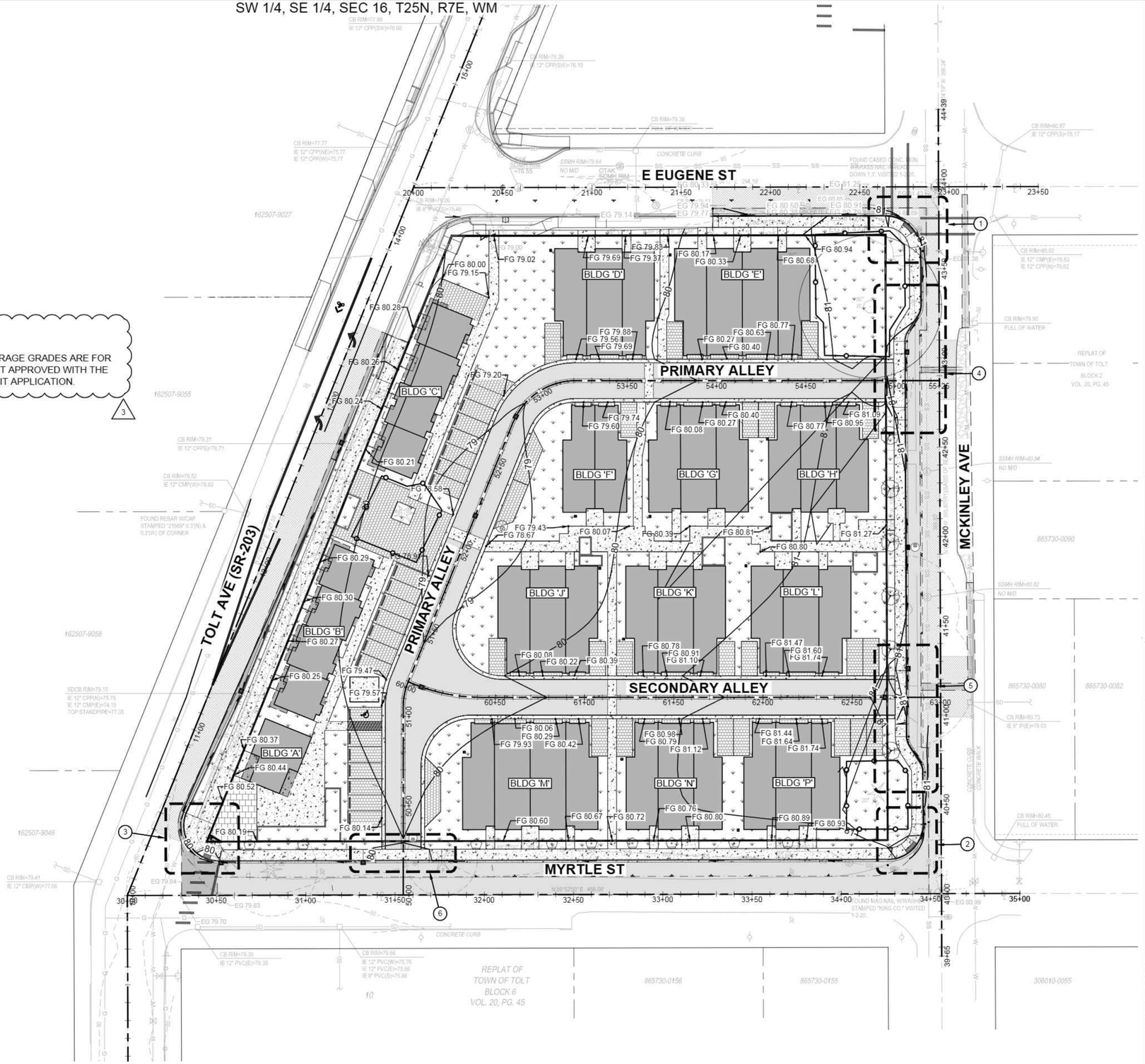
GRADING QUANTITY ESTIMATE:	
TOTAL ON-SITE:	
CUT:	1,000 CY's
FILL:	3,000 CY's

GRADING QUANTITIES GENERATED USING CIVIL 3D SOFTWARE TO COMPARE TRIANGULATED IRREGULAR NETWORKS (TINS). ALL EXCESS CUT MATERIAL WILL BE SPREAD ON SITE PER THESE GRADING PLANS OR HAULED TO A SUITABLE DUMP LOCATION. IMPORT OF BACKFILL MATERIALS ARE EXPECTED SUCH AS FOR BUILDING PADS, UTILITY TRENCHES AND ROAD BASES SHALL BE TRANSPORTED TO THE SITE AND HAVE NOT BEEN ACCOUNTED FOR IN THESE VOLUMES.

VOLUMES ARE FOR PERMIT ONLY. CONTRACTOR SHALL PROVIDE INDEPENDENT TAKEOFF FOR BIDDING.

LEGEND:

- ASPHALT PAVEMENT (FULL DEPTH SECTION)
- GRIND AND OVERLAY
- CONCRETE PAVEMENT
- CONCRETE WALK / PAD
- GRID / BLOCK PAVERS (ECO-PRIORA)
- BUILDING / ROOF AREAS
- LANDSCAPE / PLANTER AREAS
- 63 PROPOSED CONTOUR



No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — 47612 — REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Timothy Gabelein
Date: 2022.10.05 13:00:03 -07'00'

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
GRADING PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR

DATE:	REV.	SHEET
9/30/2022	3	10 OF 27

SHEET NUMBER
C10

CAD FILE NAME: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
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AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM

KEY NOTES

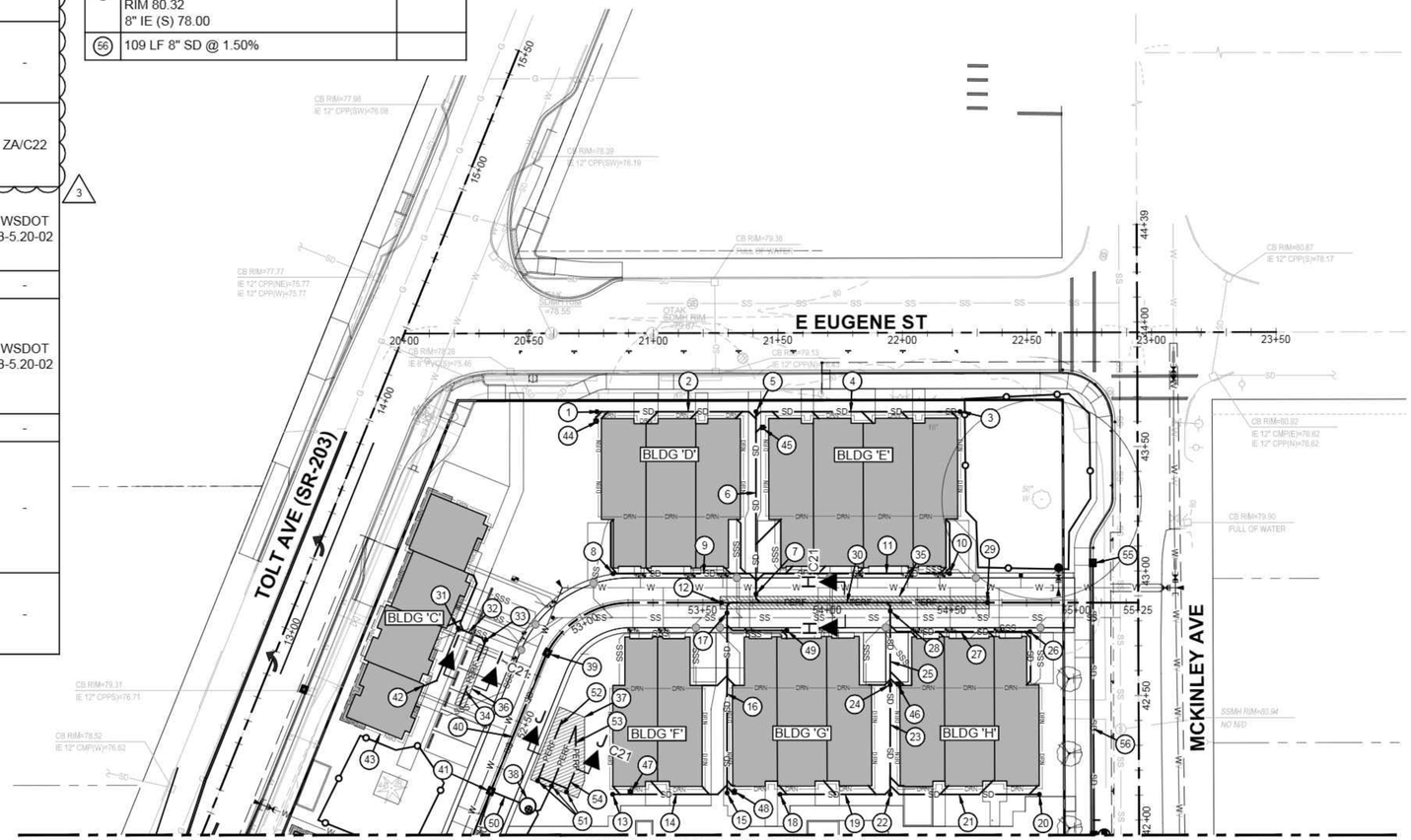
KEY	DESCRIPTION	DETAIL/ SHEET
1	6" SDCO RIM 79.30 6" IE 76.55	-
2	67 LF 6" SD @ 1.63% MIN	-
3	6" SDCO RIM 80.95 6" IE 78.35	-
4	80 LF 6" SD @ 2.00% MIN	-
5	6" SDCO RIM 79.90 6" IE 75.46	-
6	74 LF 6" PVC SD @ 1.08%	-
7	6" SDCO RIM 79.93 6" IE 74.66	-
8	6" SDCO RIM 79.50 6" IE 77.05	-
9	60 LF 6" SD @ 2.00% MIN	-
10	6" SDCO RIM 80.91 6" IE 78.26	-
11	78 LF 6" SD @ 2.00% MIN	-
12	6" SDCO RIM 79.78 6" IE 74.66	-
13	6" SDCO RIM 79.45 6" IE 76.85	-
14	47 LF 6" SD @ 1.79%	-
15	6" SDCO RIM 80.20 6" IE 76.01	-
16	72 LF 6" SD @ 1.87%	-
17	6" SDCO RIM 79.78 6" IE 74.66	-
18	6" SDCO RIM 80.34 6" IE 77.92	-
19	45 LF 6" SD @ 1.95%	-
20	6" SDCO RIM 81.22 6" IE 78.75	-
21	63 LF 6" SD @ 2.00% MIN	-
22	6" SDCO RIM 80.73 6" IE 77.04	-
23	44 LF 6" SD @ 2.00%	-
24	6" SDCO RIM 80.75 6" IE 76.16	-
25	28 LF 6" SD @ 5.36%	-
26	6" SDCO RIM 81.16 6" IE 78.60	-
27	52 LF 6" SD @ 2.00% MIN	-
28	6" SDCO RIM 80.50 6" IE 74.66	-
29	6" SDCO RIM 80.75 6" IE 74.66	-
30	108 LF 6" PERF PIPE @ 0.00%	- 3
31	SDCO RIM 79.64 6" IE 76.80	-
32	12 LF 6" PVC SD @ 3.00%	-
33	SDCO RIM 79.34 6" IE 76.44	-
34	26 LF 6" PERF PIPE @ 0.00%	-
35	108' X 5' ROOF INFILTRATION FACILITY FG 80.00± TOP OF FACILITY 75.16 6" PERF PIPE IE 74.66 BOTTOM OF FACILITY 70.66	H-H/C21
36	26' X 4' ROOF INFILTRATION FACILITY FG 79.2± TOP OF FACILITY 76.94 6" PERF PIPE IE 76.44 BOTTOM OF FACILITY 72.44	I-I/C21
37	520 SF ROADWAY INFILTRATION FACILITY FG 79.90± TOP OF FACILITY 74.09 6" PERF PIPE IE 73.09 BOTTOM OF FACILITY 68.59	-
38	STORMFILTER MANHOLE #1 W/ 6 ZPG TREATMENT CARTRIDGES RIM 79.90 8" IE (W) 75.39 6" IE (E) 73.09	ZA/C22
39	CATCH BASIN #3 W/ VANED GRATE STA 52+80.00, 0.00' LT/RT RIM 78.91 12" IE (SW) 76.25	WSDOT B-5.20-02
40	60 LF 12" SD @ 1.00%	-
41	CATCH BASIN #2 W/ VANED GRATE STA 52+20.00, 0.00' RIM 78.31 12" IE (NE) 75.65 12" IE (SW) 75.61 12" IE (E) 75.55	WSDOT B-5.20-02
42	4" DOWNSPOUT (TYP)	-
43	PERIMETER FOOTING DRAIN - 4" DIAMETER PERFORATED PVC PIPE FOOTING DRAINS SURROUNDED BY AT LEAST 6" OF 1-INCH-MINUS, WASHED ROCK ENCIRCLED WITH NON-WOVEN, GEOTEXTILE FILTER FABRIC (MIRAFI 140N, SUPAC 4NP, OR SIMILAR MATERIAL)(TYP)	-
44	12" AREA DRAIN RIM 79.15 4" IE (E) 76.65 (FTG DRAIN) 6" IE (N) 76.55 W/ 2' MIN SUMP	-
45	12" AREA DRAIN RIM 80.00 4" IE (E) 77.50 (FTG DRAIN) 6" IE (W) 77.40 W/ 2' MIN SUMP	-
46	12" AREA DRAIN RIM 80.70 4" IE (E) 78.00 (FTG DRAIN) 6" IE (W) 77.90 W/ 2' MIN SUMP	-
47	12" AREA DRAIN RIM 79.40 4" IE (E) 77.00 (FTG DRAIN) 6" IE (S) 76.90 W/ 2' MIN SUMP	-
48	12" AREA DRAIN RIM 80.15 4" IE (N) 77.70 (FTG DRAIN) 6" IE (W) 77.60 W/ 2' MIN SUMP	-
49	6" SDCO RIM 80.17 6" IE 77.65	-
50	16 LF 8" SD @ 1.00%	-
51	6" SDCO RIM 78.9± 6" IE 73.09	-
52	26 LF 6"PERF PIPE IE 71.99	-
53	12 LF 6"PERF PIPE IE 71.99	-
54	28 LF 6"PERF PIPE IE 71.99	- 3
55	CATCH BASIN #4 W/ VANED GRATE STA 43+03.36, 18.17' LT RIM 80.32 8" IE (S) 78.00	
56	109 LF 8" SD @ 1.50%	

GENERAL NOTES:

1. ALL SD LINES WITH LESS THAN 2' OF COVER SHALL BE DUCTILE IRON.
2. CONTRACTOR TO COORDINATE DIRECTLY WITH PUGET SOUND ENERGY PRIOR TO START OF UTILITY CONSTRUCTION TO CONFIRM DESIGN LOCATION OF ONSITE ELECTRICAL TRENCHING. REFERENCE ELECTRICAL ORDER 105095152.

LEGEND:

- ASPHALT PAVEMENT (FULL DEPTH SECTION)
- GRIND AND OVERLAY
- CONCRETE PAVEMENT
- CONCRETE WALK / PAD
- GRID / BLOCK PAVERS (ECO-PRIORA)
- BUILDING / ROOF AREAS
- LANDSCAPE / PLANTER AREAS
- PROPOSED EDGE TRAVEL LANE
- CATCH BASIN (TYPE 1)



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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
DRAINAGE PLAN (NORTH)

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
	SHEET 11 OF 27

SHEET NUMBER
C11

G:\4D FILE NUMBER P\CLIENTS\CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
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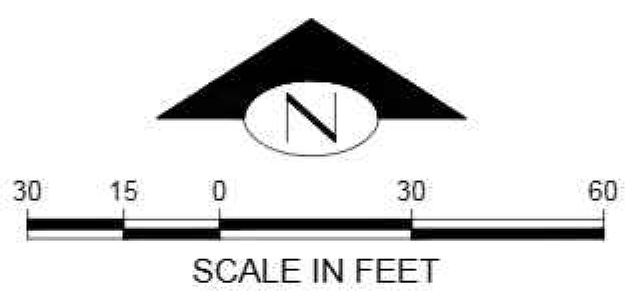

KEY NOTES

KEY	DESCRIPTION	DETAIL/ SHEET
1	6" SDCO RIM 80.30 6" IE 77.70	-
2	38 LF 6" SD @ 1.37%	-
3	6" SDCO RIM 80.36 6" IE 77.18	-
4	24 LF 6" SD @ 2.00% MIN	-
5	32 LF 6" PERF PIPE @ 0.00%	- 3
6	6" SDCO RIM 79.90 6" IE 76.62	-
7	18 LF 6" SD @ 2.00% MIN	-
8	6" SDCO RIM 80.06 6" IE 77.50	-
9	40 LF 6" SD @ 2.00% MIN	-
10	6" SDCO RIM 80.50 6" IE 77.96	-
11	82 LF 6" SD @ 1.00%	-
12	6" SDCO RIM 80.90 6" IE 78.16	-
13	60 LF 6" SD @ 1.70% MIN	-
14	6" SDCO RIM 80.75 6" IE 77.14	-
15	73 LF 6" SD @ 2.00% MIN	-
16	6" SDCO RIM 80.49 6" IE 74.98	-
17	6" SDCO RIM 80.75 6" IE 77.32	-
18	18 LF 6" SD @ 1.00%	-
19	6" SDCO RIM 79.83 6" IE 77.14	-
20	90 LF 6" SD @ 1.00%	-
21	6" SDCO RIM 81.00 6" IE 78.50	-
22	65 LF 6" SD @ 1.00%	-
23	6" SDCO RIM 81.90 6" IE 77.85	-
24	72 LF 6" SD @ 2.00% MIN	-
25	6" SDCO RIM 81.10 6" IE 74.98	-
26	6" SDCO RIM 81.75 6" IE 79.25	-
27	60 LF 6" SD @ 2.00% MIN	-
28	128 LF 6" PERF PIPE @ 0.00% 6" IE 74.98	- 3
29	128' X 5' ROADWAY INFILTRATION FACILITY FG 79.90± TOP OF FACILITY 75.48 4" PERF PIPE IE 74.98 BOTTOM OF FACILITY 70.98	P-P/C21
30	6" SDCO RIM 80.33 6" IE 74.98	-
31	6" SDCO RIM 81.48 6" IE 74.98	-
32	6" SDCO RIM 78.90 6" IE 76.37	-
33	68 LF 6" SD @ 1.00%	-
34	6" SDCO RIM 80.07 6" IE 75.69	-
35	71 LF 6" SD @ 1.00%	-
36	6" SDCO RIM 80.49 6" IE 74.98	-
37	6" SDCO RIM 80.37 6" IE 77.75	-
38	22 LF 6" SD @ 2.00% MIN	-
39	6" SDCO RIM 80.50 6" IE 77.80	-
40	24 LF 6" SD @ 1.00%	-
41	6" SDCO RIM 81.10 6" IE 78.70	-
42	65 LF 6" SD @ 1.00% MIN	-
43	6" SDCO RIM 80.70 6" IE 77.56	-
44	71 LF 6" SD @ 2.00% MIN	-
45	6" SDCO RIM 81.10 6" IE 74.98	-
46	6" SDCO RIM 81.55 6" IE 78.56	-
47	60 LF 6" SD @ 2.00% MIN	-
48	6" SDCO RIM 81.00 6" IE 78.50	-
49	24 LF 6" SD @ 2.00% MIN	-
50	6" SDCO RIM 80.00 6" IE 77.00	-
51	67 LF 6" SD @ 2.00% MIN	-
52	6" SDCO RIM 79.95 6" IE 77.45	-
53	4" DOWNSPOUT (TYP)	-
54	PERIMETER FOOTING DRAIN - 4" DIAMETER PERFORATED PVC PIPE FOOTING DRAINS SURROUNDED BY AT LEAST 6" OF 1-INCH-MINUS, WASHED ROCK ENCIRCLED WITH NON-WOVEN, GEOTEXTILE FILTER FABRIC (MIRAFI 140N, SUPAC 4NP, OR SIMILAR MATERIAL)(TYP)	-
55	100 LF 12" SD @ 1.00%	-
56	CATCH BASIN #1 W/ VANED GRATE STA 60+08.00, 0.00' LT/RT RIM 79.29 12" IE (NE) 76.61	WSDOT B-5.20-02
57	80 LF 8" SD @ 0.50%	-
58	CATCH BASIN #1 W/ VANED GRATE STA 30+52.53, 18.17' LT RIM 79.47 8" IE (E) 76.80	WSDOT B-5.20-02
59	5 LF 8" SD @ 2.00%	-
60	80 LF 6" PERF PIPE @ 0.00%	- 3
61	CATCH BASIN #2 W/ VANED GRATE STA 41+26.04, 18.17' LT RIM 80.42 8" IE (S) 78.16 8" IE (N) 77.06	-
62	CATCH BASIN #5 W/ SOLID LOCKING LID STA 41+94.00, 18.17' LT RIM 80.59 8" IE (N) 76.37 8" IE (S) 75.70 8" IE (E) 75.60	-
63	67 LF 6" PERF PIPE @ 0.00%	- 3
64	4 LF 2" SD @ 1.00%	-
65	12" AREA DRAIN RIM 79.90 4" IE (W) 77.50 (FTG DRN) 6" IE (N) 77.40 W/ 2' MIN SUMP	-
66	12" AREA DRAIN RIM 80.25 4" IE (N) 77.75 (FTG DRN) 6" IE (S) 77.15 W/ 2' MIN SUMP	-
67	12" AREA DRAIN RIM 80.75 4" IE (E) 78.25 (FTG DRN) 6" IE (W) 78.15 W/ 2' MIN SUMP	-
68	12" AREA DRAIN RIM 80.10 4" IE (S) 77.60 (FTG DRN) 6" IE (N) 77.50 W/ 2' MIN SUMP	-
69	12" AREA DRAIN RIM 80.70 4" IE (E) 78.00 (FTG DRN) 6" IE (W) 77.90 W/ 2' MIN SUMP	-
70	12" AREA DRAIN RIM 80.85 4" IE (E) 78.50 (FTG DRN) 6" IE (W) 77.40 W/ 2' MIN SUMP	-
71	46 LF 6" PERF PIPE @ 0.00% IE 73.09	-
72	42 LF 6" PERF PIPE @ 0.00% IE 73.09	-
73	32' X 4' INFILTRATION FACILITY FG 80.00± TOP OF FACILITY 77.12 6" PERF PIPE IE 76.62 BOTTOM OF FACILITY 72.62	K-K/C21
74	560 SF ROADWAY INFILTRATION FACILITY FG 79.30± TOP OF FACILITY 74.09 6" PERF PIPE IE 73.09 BOTTOM OF FACILITY 68.59	L-L/C21
75	67' X 5' ROADWAY INFILTRATION FACILITY FG 80.7± TOP OF FACILITY 74.70 6" PERF PIPE IE 74.20 BOTTOM OF FACILITY 70.70	M-M/C21
76	80' X 5' ROADWAY INFILTRATION FACILITY FG 79.47± TOP OF FACILITY 74.90 6" PERF PIPE IE 74.40 BOTTOM OF FACILITY 70.90	N-N/C21 3
77	6" SDCO RIM 80.08 6" IE 76.62	-
78	68 LF 8" SD @ 2.00%	-
79	STORMFILTER MANHOLE #2 W/ 3 ZPG TREATMENT CARTRIDGES RIM 80.10 8" IE (SW) 76.10 4" IE (N) 73.80	ZB/C22
80	STORMFILTER MANHOLE #3 W/ 3 ZPG TREATMENT CARTRIDGES STA 41+94.00, 14' LT (CTR MH) RIM 80.72 8" IE (W) 75.56 4" IE (S) 73.26	ZC/C22
81	CATCH BASIN W/ GRATE STA 31+32.18, 18.17' LT RIM 79.71 8" IE (W) 76.40 8" IE (NW) 76.40	WSDOT B-5.20-02
82	30 LF 8" SD @ 1.00%	-
83	CATCH BASIN #6 W/ VANED GRATE STA 62+68.33, 0.00 RIM 81.15 8" IE (N) 78.35	-
84	19 LF 8" SD @ 1.00%	-

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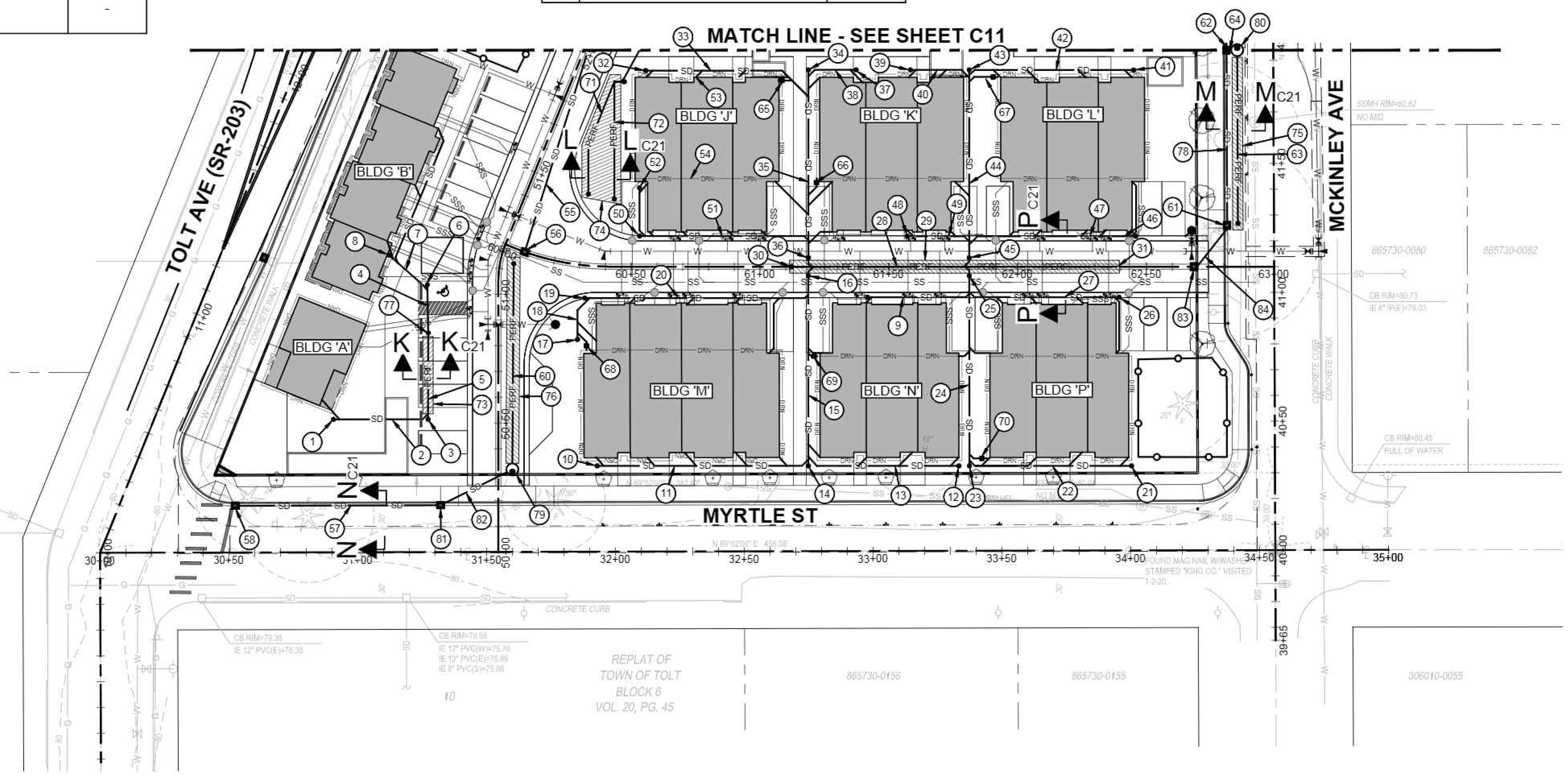

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- LANDSCAPE / PLANTER AREAS
- PROPOSED EDGE TRAVEL LANE
- CATCH BASIN (TYPE 1)

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SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
DRAINAGE PLAN (SOUTH)

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
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SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 / SHEET 12 OF 27

SHEET NUMBER
C12

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM

KEY NOTES

KEY	DESCRIPTION	DETAIL/ SHEET
1	PROPOSED 6" SS. SEE SS PROFILES ON SHEET C17	-
2	52 LF 6" SSS @ 1.00%	-
3	50 LF 6" SSS @ 1.00%	-
4	39 LF 6" SSS @ 1.00%	-
5	37 LF 6" SSS @ 1.00%	-
6	SSS VALVE PIT (TYP)	S/C25
7	20 LF 6" SSS @ 1.00%	-
8	23 LF 6" SSS @ 1.00%	-
9	52 LF 6" SSS @ 1.00%	-
10	26 LF 6" SSS @ 1.00%	-
11	30 LF 6" SSS @ 1.00%	-
12	30 LF 6" SSS @ 1.00%	-
13	24 LF 6" SSS @ 1.00%	-
14	47 LF 6" SSS @ 1.00%	-
15	21 LF 6" SSS @ 1.00%	-
16	24 LF 6" SSS @ 1.00%	-
17	23 LF 6" SSS @ 1.00%	-
18	26 LF 6" SSS @ 1.00%	-
19	23 LF 6" SSS @ 1.00%	-
20	20 LF 6" SSS @ 1.00%	-
21	23 LF 6" SSS @ 1.00%	-
22	22 LF 6" SSS @ 1.00%	-
23	27 LF 6" SSS @ 1.00%	-
24	24 LF 6" SSS @ 1.00%	-
25	CONNECT TO SS W/ NEW WYE FITTING	-
26	12" VALVE PIT W/ 4" AIR-INTAKE ON FEEDER LINES (TYP)	V/C25, P/C24
27	CONNECT TO EX SS W/ NEW WYE FITTING, VACUUM SEWER VALVE & GAUGE TAP	O/C24 T/C25
28	6" SSSCO RIM 79.16 6" IE 73.80	-
29	30 LF 6" SSS @ 1.00%	-
30	23 LF 6" SSS @ 1.00%	-
31	34 LF 6" SSS @ 1.00%	-
32	33 LF 6" SSS @ 1.00%	-
33	42 LF 6" SSS @ 1.00%	-
34	42 LF 6" SSS @ 1.00%	-
35	42 LF 6" SSS @ 1.00%	-
36	NOT USED	-
37	23 LF 6" SSS @ 1.00%	-
38	34 LF 6" SSS @ 1.00%	-
39	33 LF 6" SSS @ 1.00%	-
40	23 LF 6" SSS @ 1.00%	-
41	6" SSSCO RIM 79.40 6" IE 73.90	-
42	5 LF 6" SSS @ 1.00%	-
43	19 LF 6" SSS @ 1.00%	-
44	43 LF 6" SSS @ 1.00%	-
45	19 LF 6" SSS @ 1.00%	-
46	WHERE SANITARY VACCUUM LINES CROSS THROUGH INFILTRATION FACILITIES, SEWER LINES TO BE SLEEVED (TYP). SLEEVE TO BE SCHEDULE 40 PVC OR DUCTILE IRON. CASING SPACERS TO BE POLYETHYLENE MATERIAL OR APPROVED EQUAL. CARRIER PIPE JOINTS ARE NOT ALLOWED WITHIN CASING PIPE	-

SCALE IN FEET

KEY NOTES

BUILDING UNIT LETTER DESIGNATION	BUILDING FINISHED FLOOR ELEVATION	MINIMUM CRAWL SPACE ELEVATION	GARAGE FINISHED SLAB ELEVATION	SSS ELEVATION
A	80.75	-	-	77.42
B	81.80	80.30	79.0	78.17
C	81.80	80.30	79.0	78.17
D	81.40	79.00	79.7	78.92
E	82.30	79.90	80.7	79.87
F	81.30	78.80	79.6	78.77
G	81.90	79.5	80.3	79.47
H	82.60	81.20	80.9	80.12
J	81.90	79.50	80.3	79.52
K	82.60	80.20	81.0	80.17
L	83.00	80.60	81.5	80.67
M	82.00	79.60	80.3	79.47
N	82.60	80.00	81.0	80.17
P	83.30	80.90	81.6	80.77

VALVE PIT NOTES:

1. ALL VALVE PITS TO BE INSTALLED PRIOR TO UNIT CONSTRUCTION. CLEANOUTS TO BE LEFT OUTSIDE OF DRIVABLE SURFACE (ASPHALT/CONCRETE/TURFSTONE) TO SERVE ALL UNITS.
2. VALVE PITS TO SERVE A MAXIMUM OF TWO UNITS PER PIT.
3. EACH STUB FROM VALVE PIT SHALL SERVE A MAXIMUM OF ONE UNIT.

SIDE SEWER NOTES:

1. ALL SIDE SEWERS TO BE FITTED WITH A BACKFLOW VALVE AND AIR VENT.

LEGEND:

- ASPHALT PAVEMENT (FULL DEPTH SECTION)
- GRIND AND OVERLAY
- CONCRETE PAVEMENT
- CONCRETE WALK / PAD
- GRID / BLOCK PAVERS (ECO-PRIORA)
- BUILDING / ROOF AREAS
- LANDSCAPE / PLANTER AREAS

GENERAL NOTES:

1. ALL SIDE SEWERS TO BE FITTED WITH A BACKFLOW VALVE AND AIR VENT.
2. CONTRACTOR TO COORDINATE DIRECTLY WITH PUGET SOUND ENERGY PRIOR TO START OF UTILITY CONSTRUCTION TO CONFIRM DESIGN LOCATION OF ONSITE ELECTRICAL TRENCHING. REFERENCE ELECTRICAL ORDER 105095152.

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — Digitally signed by Timothy W. Gabelein — Date: 2022.10.05 13:04:23 -07'00' — REGISTERED PROFESSIONAL ENGINEER

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

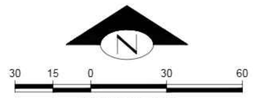
PROJECT: TOLT VILLAS
CARNATION, WA 98014
SANITARY SEWER PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET	13 OF 27

SHEET NUMBER
C13

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



KEY NOTES

KEY	DESCRIPTION	DETAIL/ SHEET
1	EX HYDRANT TO REMAIN	-
2	NOT USED	-
3	NOT USED	-
4	STA 51+12.35, 4.79' LT 1 EA - 8" 22.5° ELBOW (FL) W/ CONC BLOCKING	Y/C26
5	20 LF 8" DI WM	-
6	STA 51+31.65, 4.00' LT 1 EA - 12"x8"x12" TEE (FLxFLxFL) 1 EA - 12" GV (FLxMJ) W/ CONC BLOCKING	Y/C26
7	49 LF 12" DI WM	-
8	STA 51+80.50, 4.00' LT 1 EA - 12"x8"x12" TEE (FLxFLxFL) 1 EA - 12" GV (FLxMJ) 1 EA - 8" GV (FLxMJ) W/ CONC BLOCKING	Y/C26
9	79 LF 12" DI WM	-
10	STA 12+30.80, 17.8'± RT CONNECT TO EX 12" WM 1 EA - 12" TEE (MJxMJxFL) 1 EA - DI SPOOL 1 EA - 12" GV (FLxMJ) W/ CONC BLOCKING	Y/C26
11	126 LF 8" DI WM	-
12	STA 52+99.80, 13.89' LT 1 EA - 8" 90° ELBOW (FL) 1 EA - 8" 22.5° ELBOW (FL) W/ CONC BLOCKING	Y/C26
13	246 LF 8" DI WM	-
14	STA 42+93.20, 15.0' RT 1 EA - 8"x8"x8" TEE (FLxFLxFL) 2 EA - 8" GV (FLxMJ) W/ CONC BLOCKING	Y/C26
15	CONNECT TO EX 8" WM AT 6.0' SOUTH OF E EUGENE ST CL 1 EA - 8" SPOOL 1 EA - 8" DI SLEEVE (MJ) 1 EA - 8" GATE VALVE (FLxMJ)	-
16	30 LF 8" DI WM	-
17	RECONNECT EX 6" VALVE TO NEW 8" DI WM 1 EA - 8"x8x6" TEE (FLxFLxMJ) 1 EA - 6" DI SPOOL	-
18	CONCRETE THRUST BLOCK (TYP)	Y/C26
19	NOT USED	-
20	WATER METER BOX SAMPLING STATION	Z5/C26
21	177 LF 8" DI WM	-
22	STA 41+15.86, 17.3' RT CONNECT TO EX 8" WM 1 EA - 12"x8"x8" TEE (MJxMJxFL) 1 EA - 8" DI SPOOL 1 EA - 8" GV (FLxMJ) 1 EA - 12" GV (FLxMJ) W/ CONC BLOCKING	Y/C26
23	49 LF 12" DI WM	-
24	STA 62+67.52, 6.00' LT 1 EA - 12"x12"x6" TEE 1 EA - 7 LF 6" DI SPOOL 1 EA - HYDRANT ASSEMBLY W/ CONC BLOCKING	X/C25
25	228 LF 12" DI WM	-
26	STA 60+39.64, 6.00' LT 1 EA - 12" 22.5° ELBOW (FL) W/ CONC BLOCKING	-
27	40 LF 12" DI WM	-
28	5/8" WATER SERVICE & METER (TYP) W/ CHECK VALVE FOR SPRINKLERS	Z1/C26
29	NOT USED	-
30	1" WATER SERVICE & METER (TYP) W/ CHECK VALVE FOR SPRINKLERS	Z1/C26
31	1 1/2" IRRIGATION METER WITH BACKFLOW PREVENTER	Z3/C26
32	DURING REPLACEMENT OF EX WATERM MAIN, INSTALL 1" SERVICE LINES 5/8" AND METERS IN METER BOXES TO UNITS AFFECTED BY WATER MAIN REPLACEMENT	-
33	CONTRACTOR TO FIELD LOCATE ALL EX WATER SERVICES. SERVICE LINES AND METER SIZES ARE MINIMUM, MATCH EXISTING SIZES IF LARGER	-
34	UPON APPROVAL/DISINFECTION OF NEW WM, DISCONNECT ALL EX SERVICES AND RECONNECT TO NEW WATER MAIN	-
35	STA 50+88.20, 4.00' LT 1 EA - 12"x12"x6" TEE 1 EA - 12" PLUG (FL) 1 EA - 7 LF 6" DI SPOOL 1 EA - HYDRANT ASSEMBLY W/ CONC BLOCKING	X/C25
36	STA 54+92.80, 6.00' LT 1 EA - 8"x8"x6" TEE 1 EA - 7 LF 6" DI SPOOL 1 EA - HYDRANT ASSEMBLY W/ CONC BLOCKING	X/C25
37	WATER SERVICES TO ROUTE ABOVE INFILTRATION TRENCH DRAIN ROCK (TYP)	-

GENERAL NOTES:

1. CONTRACTOR TO COORDINATE DIRECTLY WITH PUGET SOUND ENERGY PRIOR TO START OF UTILITY CONSTRUCTION TO CONFIRM DESIGN LOCATION OF ONSITE ELECTRICAL TRENCHING. REFERENCE ELECTRICAL ORDER 105095152.

No.	DATE	BY	REVISION
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2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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Digitally signed by Tim Gabelein
Date: 2022.10.06 13:04:46-07'00'

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

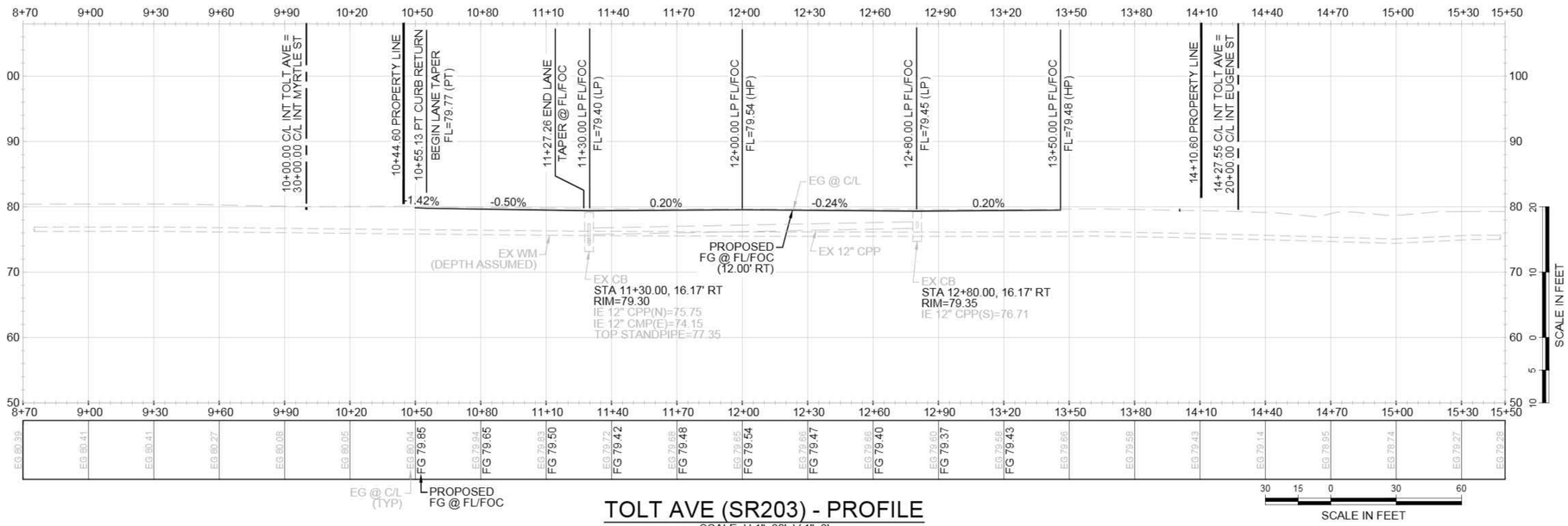
PROJECT: TOLT VILLAS
CARNATION, WA 98014
WATER PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET	14 OF 27

SHEET NUMBER
C14

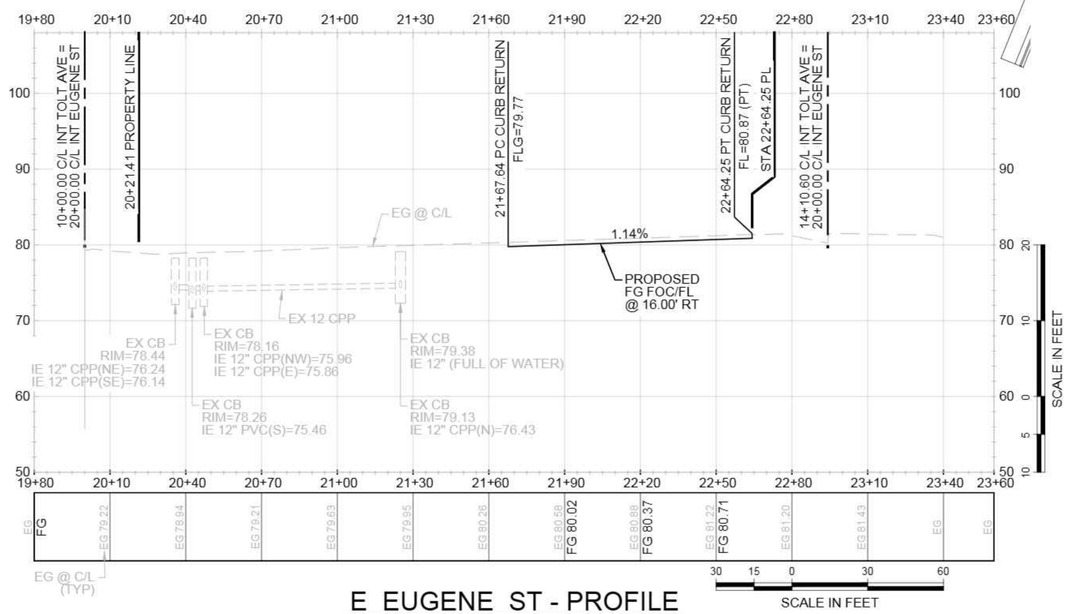
CAD FILE NUMBER: P:\CLIENTS-CIVIL HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\RAW\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (24.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



TOLT AVE (SR203) - PROFILE

SCALE: H.1"=30'; V.1"=3'



E EUGENE ST - PROFILE

SCALE: H.1"=30'; V.1"=3'

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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Date: 2022.10.05 13:05:12 -07'00'

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

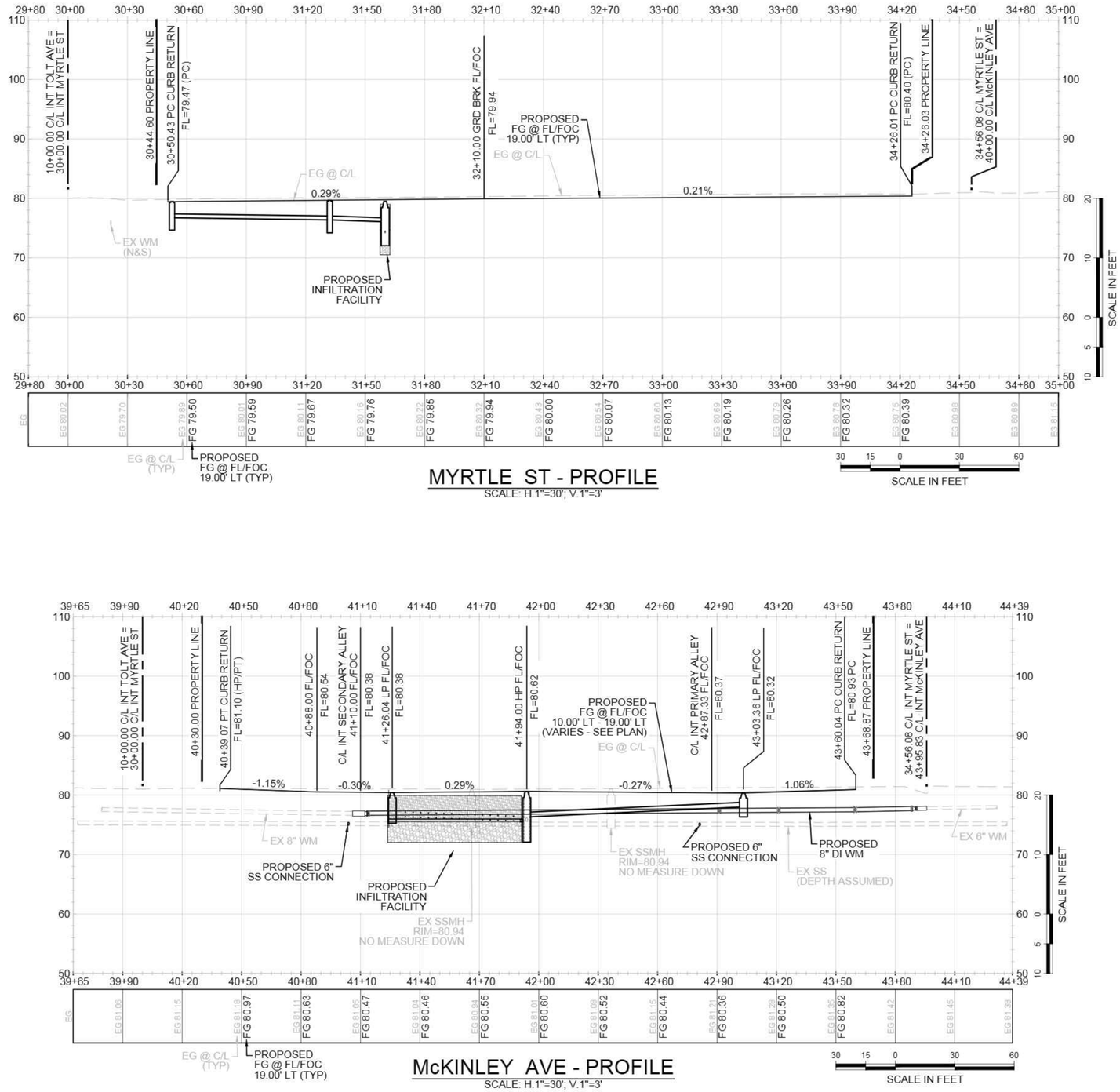
PROJECT: TOLT VILLAS
CARNATION, WA 98014
ROAD PROFILES

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET 15 OF 27	

SHEET NUMBER
C15

CAD FILE NUMBER: P:\CLIENTS\CIVIL\HYBRID ARCHITECTS\CARNATION\PERMITTING\CONSTRUCTION\DRAWINGS\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK | SAVE DATE: 9/30/2022 1:41 PM - SHEET SET | XX.XX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



MYRTLE ST - PROFILE

SCALE: H.1"=30'; V.1"=3'

McKINLEY AVE - PROFILE

SCALE: H.1"=30'; V.1"=3'

No.	DATE	BY	REVISION
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3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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Digitally signed by Tim Gabelein
Date: 2022.10.06 13:05:46 -07'00'

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

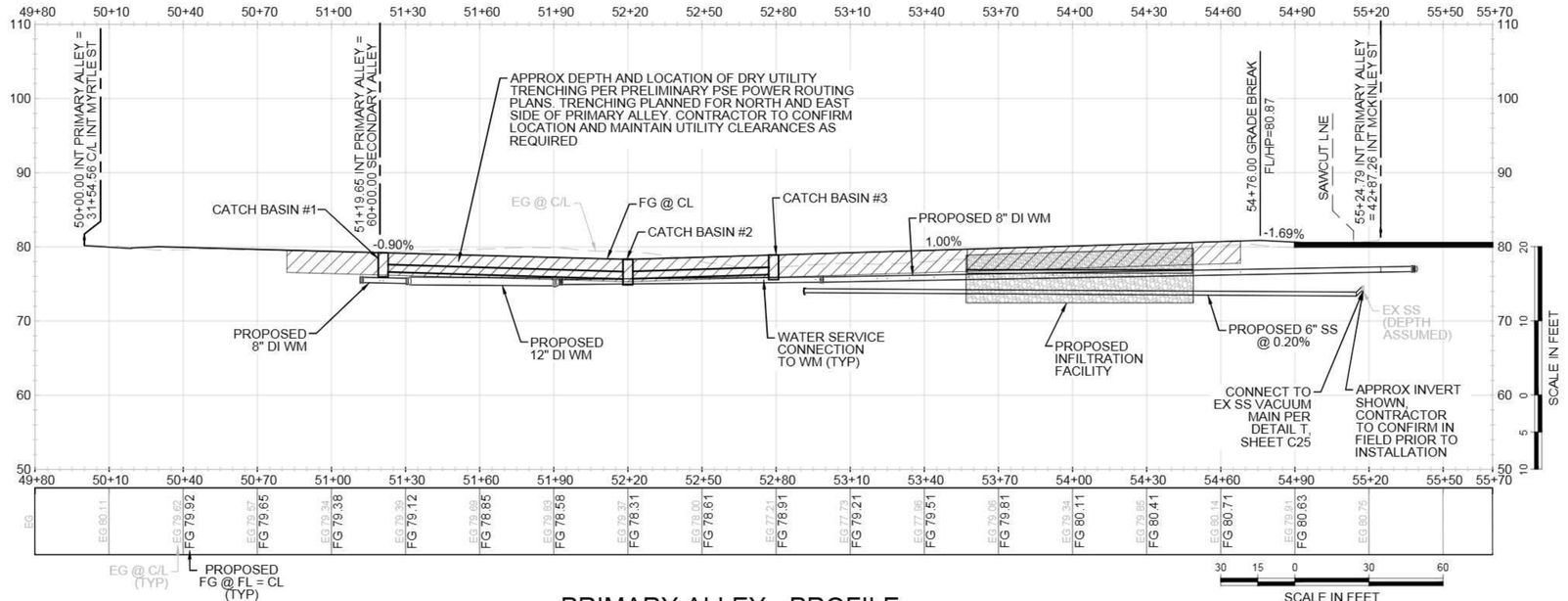
PROJECT: TOLT VILLAS
CARNATION, WA 98014
ROAD PROFILES

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET	16 OF 27

SHEET NUMBER
C16

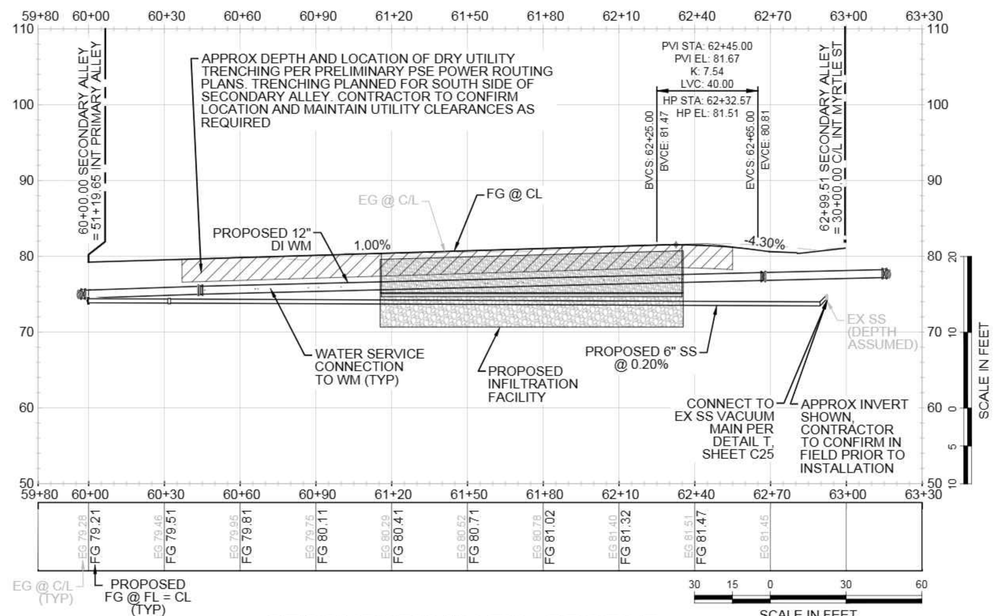
C:\3D FILE NUMBER PVC\CLIENTS\CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\ROAD\MYTOLT MLLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



PRIMARY ALLEY - PROFILE

SCALE: H.1"=30'; V.1"=3'



SECONDARY ALLEY - PROFILE

SCALE: H.1"=30'; V.1"=3'

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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Date: 2022.10.05 13:06:12 -07'00'

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OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

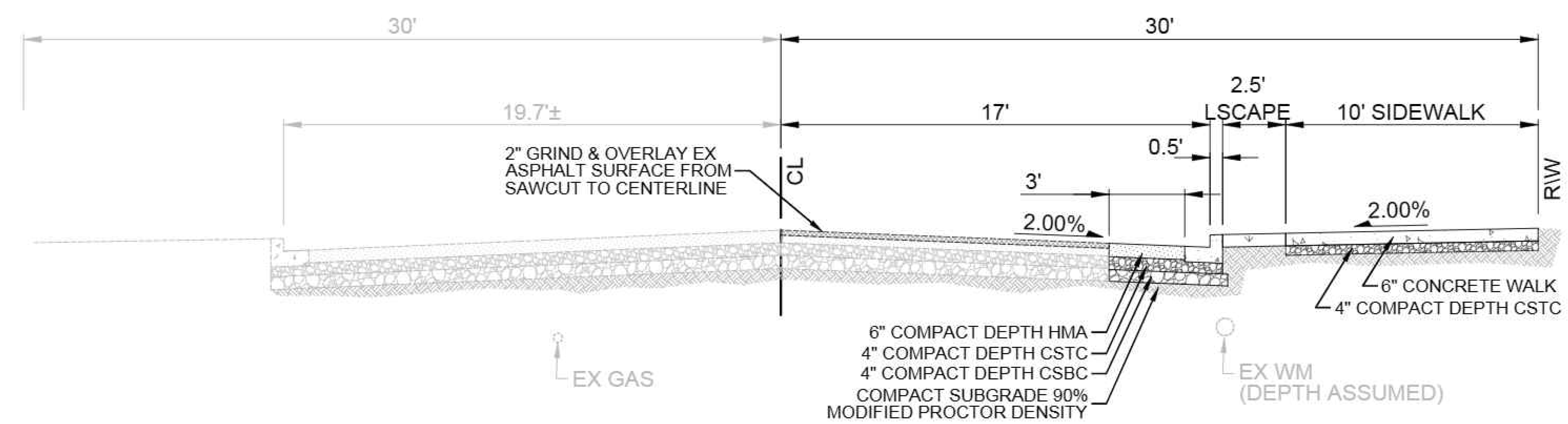
PROJECT: TOLT VILLAS
CARNATION, WA 98014
FIRE LANE PROFILES

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET	17 OF 27

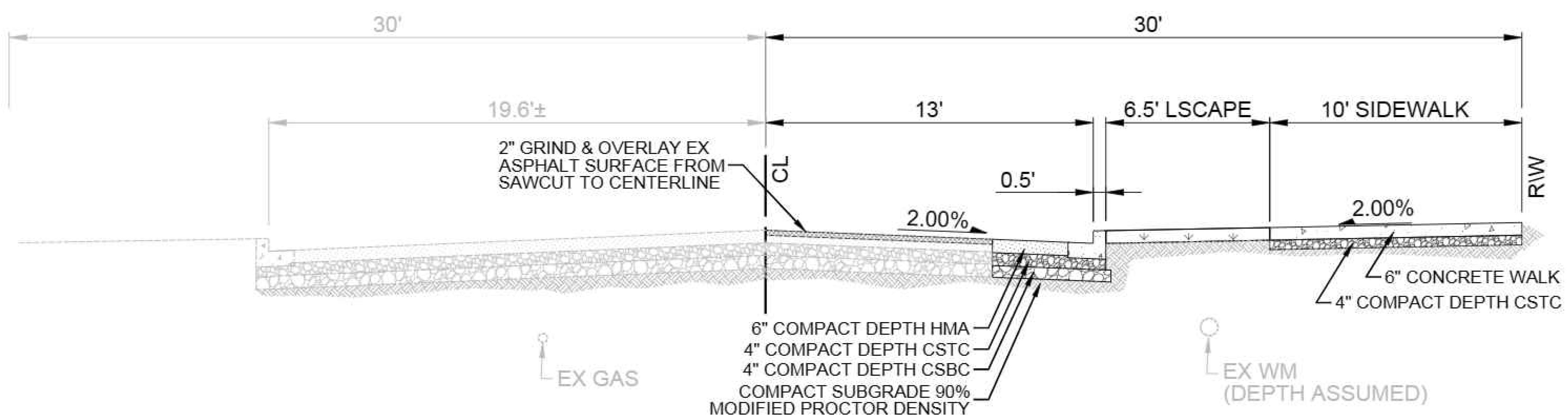
SHEET NUMBER
C17

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

TOLT AVE - OTAK - SECTION A-A / C09
NOT TO SCALE



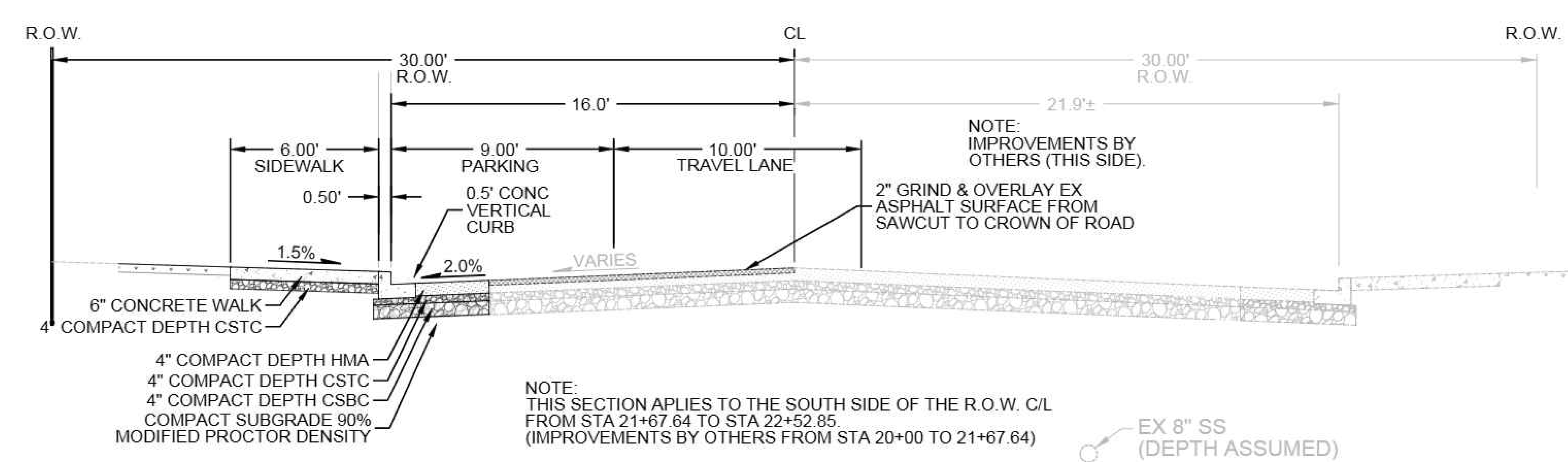
TOLT AVE - TOLT VILLAS - SECTION B-B / C09
NOT TO SCALE



TOLT AVE @ MYRTLE ST - SECTION C-C / C09
NOT TO SCALE

GENERAL NOTES:

1. GEOTECHNICAL ENGINEER OF RECORD SHALL OBSERVE STORMWATER INFILTRATION FACILITY, STREET AND UTILITY CONSTRUCTION AND SHALL CONDUCT ON-SITE MATERIAL SAMPLING AND COMPACTION TESTING TO VERIFY COMPACTION FOR ROADWAY AND UTILITY TRENCHING MEETS RECOMMENDED COMPACTION CRITERIA. STORMWATER FACILITIES MUST BE CONSTRUCTED OVER NATIVE GRAVELY SOILS.



NOTE:
THIS SECTION APLIES TO THE SOUTH SIDE OF THE R.O.W. C/L FROM STA 21+67.64 TO STA 22+52.85.
(IMPROVEMENTS BY OTHERS FROM STA 20+00 TO 21+67.64)

E EUGENE ST - SECTION D-D / C09
NOT TO SCALE

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein Date: 2022.10.13

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

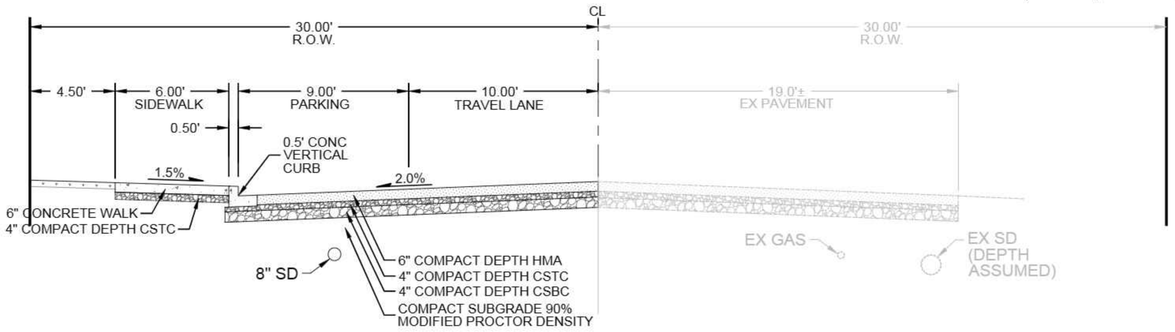
PROJECT: TOLT VILLAS
CARNATION, WA 98014
ROAD SECTIONS

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 / SHEET 18 OF 27

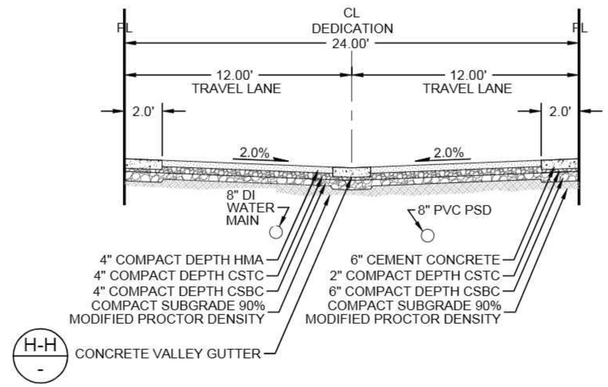
SHEET NUMBER
C18

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

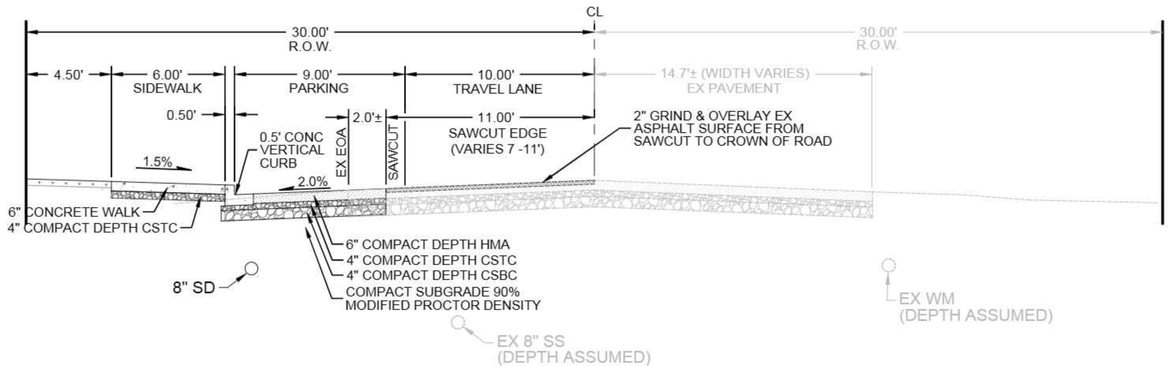
SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



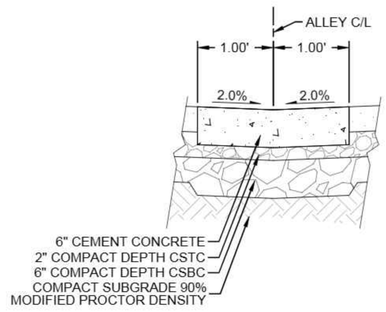
MYRTLE ST - SECTION (E-E / C09)
NOT TO SCALE



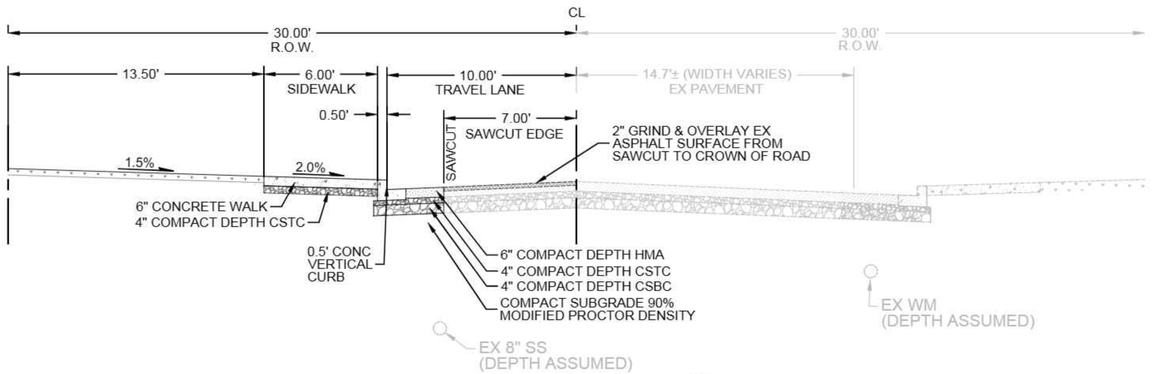
ALLEY - SECTION (G-G / C09)
NOT TO SCALE



McKINLEY AVE - SECTION (F-F / C09)
NOT TO SCALE



CONCRETE VALLEY GUTTER (H-H / C09)
NOT TO SCALE



McKINLEY AVE - SECTION (I-I / C09)
NOT TO SCALE

GENERAL NOTES:

1. GEOTECHNICAL ENGINEER OF RECORD SHALL OBSERVE STORMWATER INFILTRATION FACILITY, STREET AND UTILITY CONSTRUCTION AND SHALL CONDUCT ON-SITE MATERIAL SAMPLING AND COMPACTION TESTING TO VERIFY COMPACTION FOR ROADWAY AND UTILITY TRENCHING MEETS RECOMMENDED COMPACTION CRITERIA. STORMWATER FACILITIES MUST BE CONSTRUCTED OVER NATIVE GRAVELY SOILS.

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — REGISTERED
Digitally signed by Tim Gabelein
Date: 9/30/2022 10:08:13 -08'00'

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

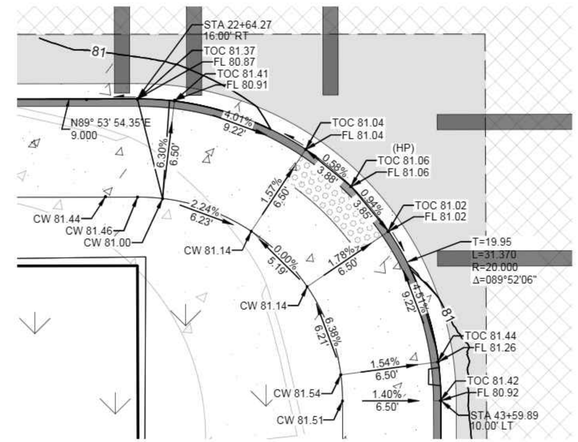
PROJECT: TOLT VILLAS
CARNATION, WA 98014
ROAD SECTIONS

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
SHEET	19 OF 27

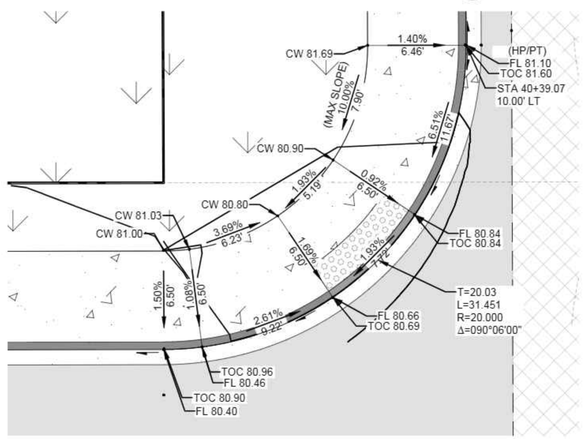
SHEET NUMBER
C19

CAD FILE NUMBER: P:\CLIENTS\CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWINGS\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI F (LL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

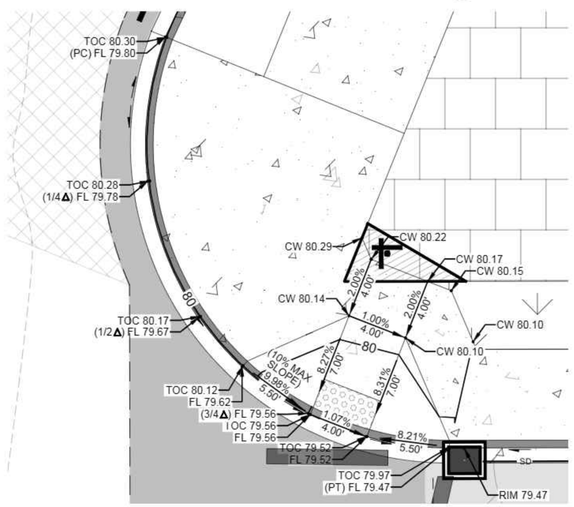
SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM



GRADING AREA DETAIL 1 C10
SCALE: 1" = 5'



GRADING AREA DETAIL 2 C10
SCALE: 1" = 5'



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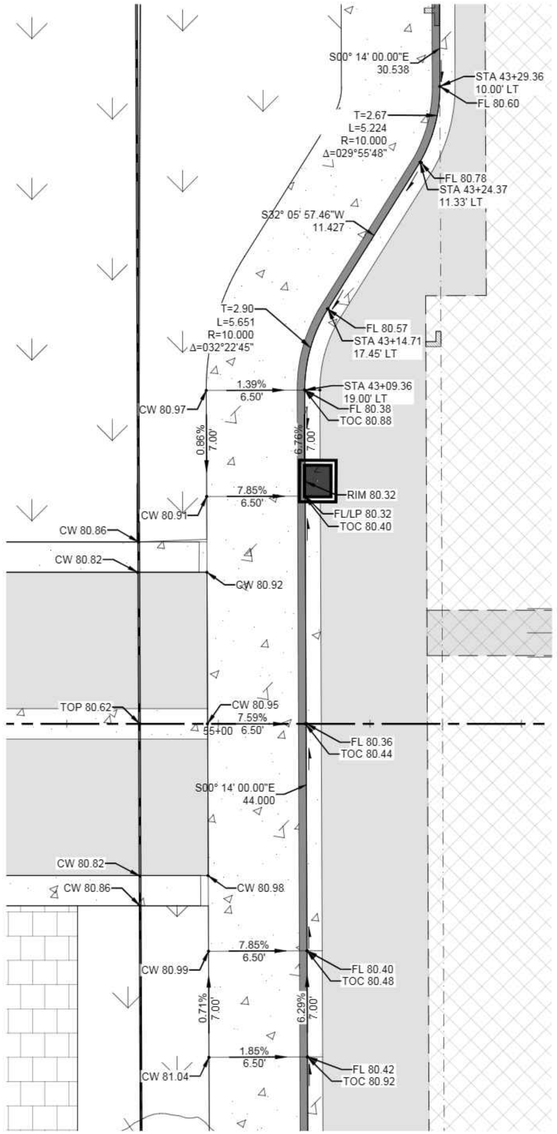
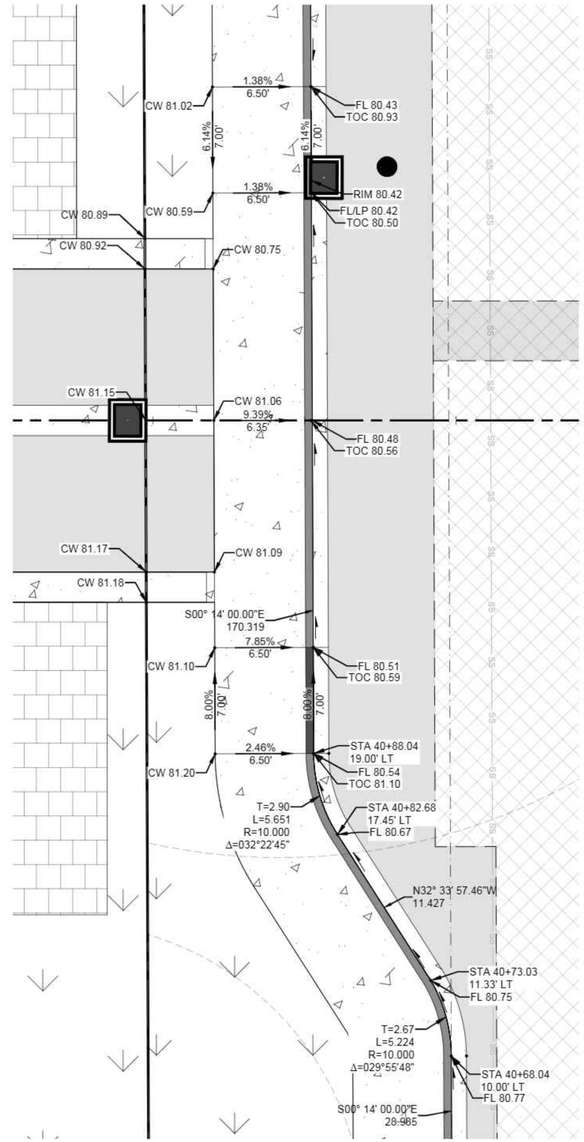
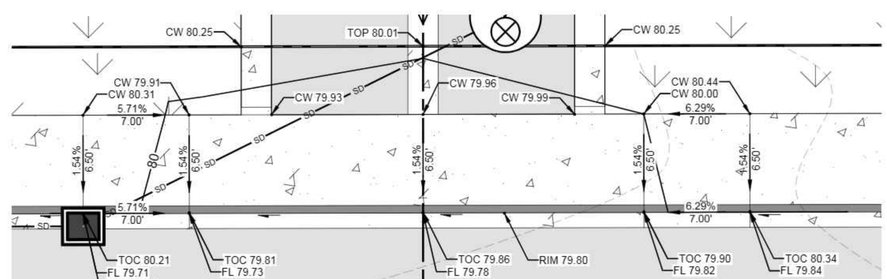
SCALE: 1" = 5'



GRADING AREA DETAIL 4 C10
SCALE: 1" = 5'



GRADING AREA DETAIL 5 C10
SCALE: 1" = 5'



GRADING AREA DETAIL 6 C10
SCALE: 1" = 5'

RAMP GRADING NOTES:

1. 10% MAX ALLOWABLE WING SLOPE.
2. 8.3% MAX ALLOWABLE RAMP SLOPE.
3. 2% MAX ALLOWABLE RAMP LANDING SLOPE.

No.	DATE	BY	REVISION
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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — 47474 — REGISTERED PROFESSIONAL ENGINEER
Digitally Signed by Tim Gabelein
Date: 9/30/2022 10:05:13 PDT

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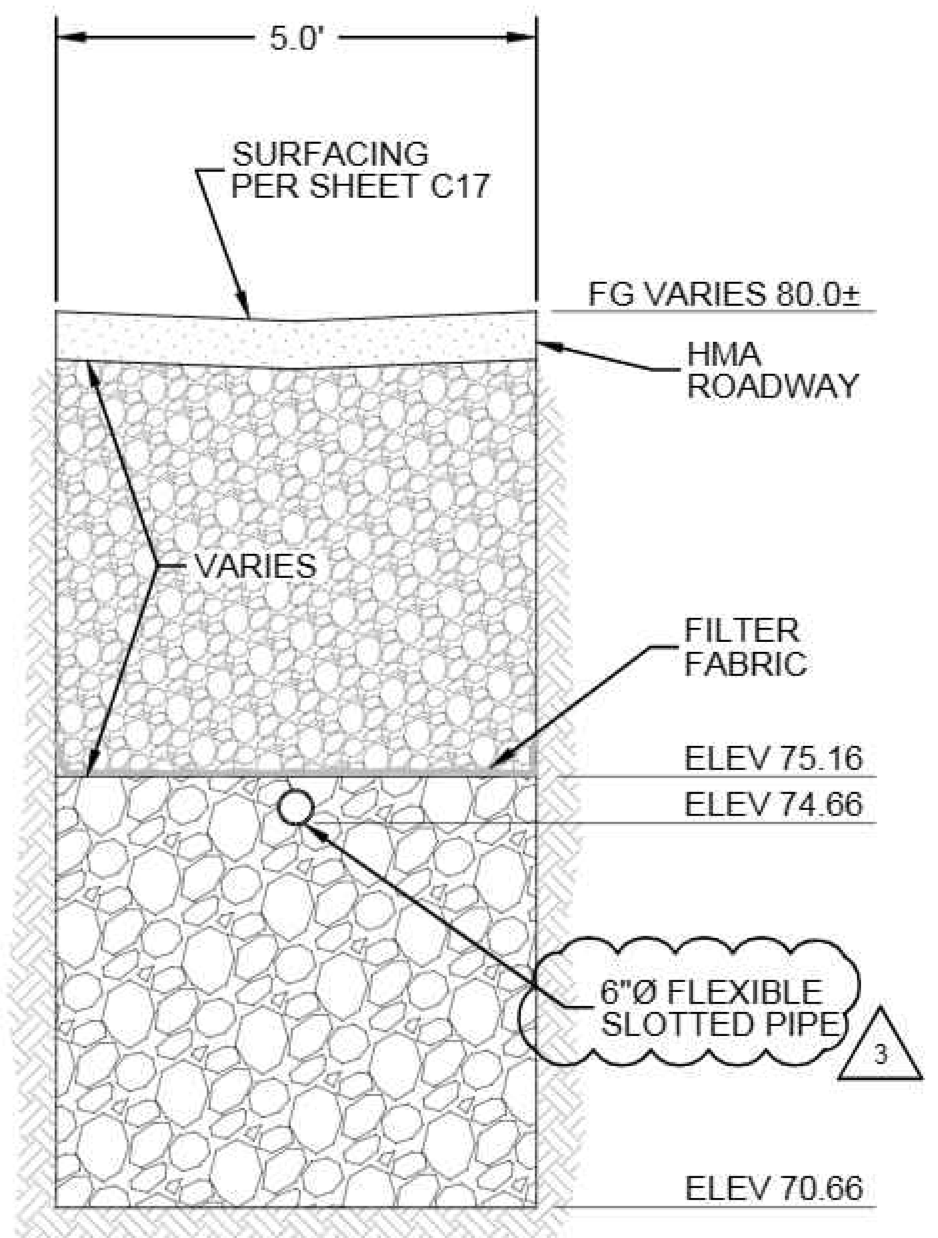
OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
GRADING DETAILS

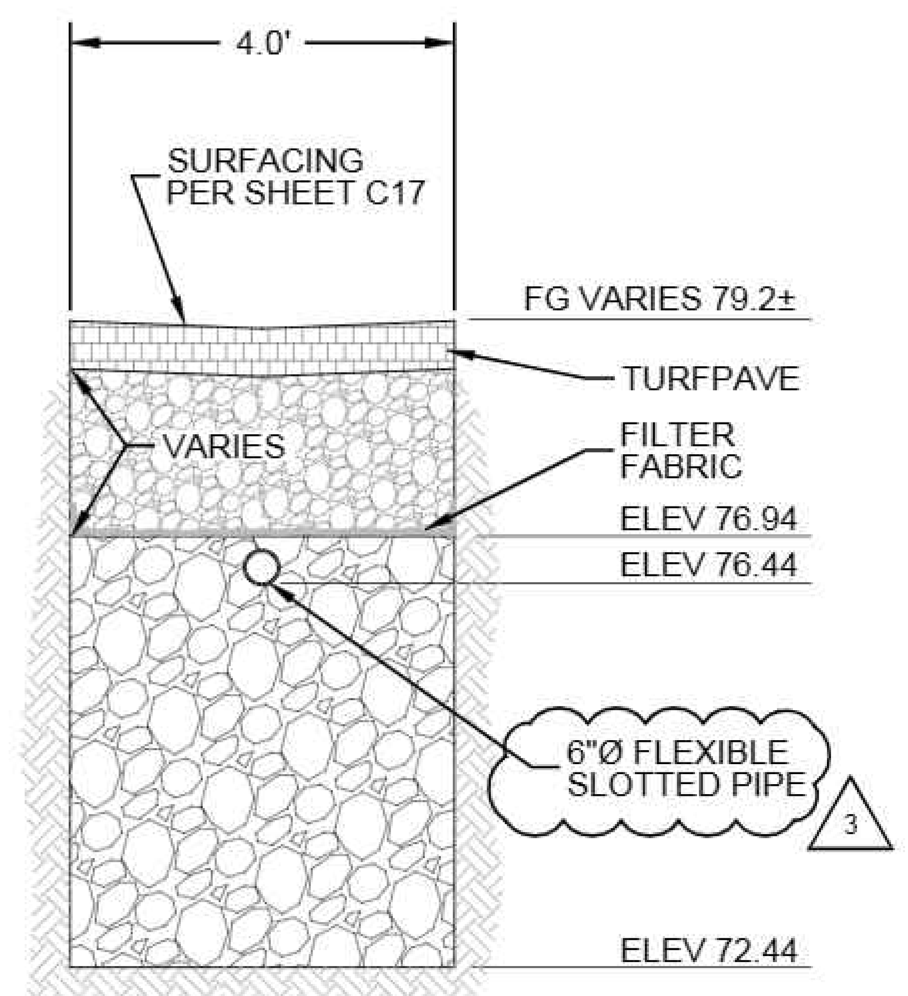
PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3
	SHEET 20 OF 27

SHEET NUMBER
C20

CAD FILE NUMBER: P:\CLIENTS\CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWINGS\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 - 1:41 PM - SHEET SET: XXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013



INFILTRATION SECTION H-H / C11
NOT TO SCALE



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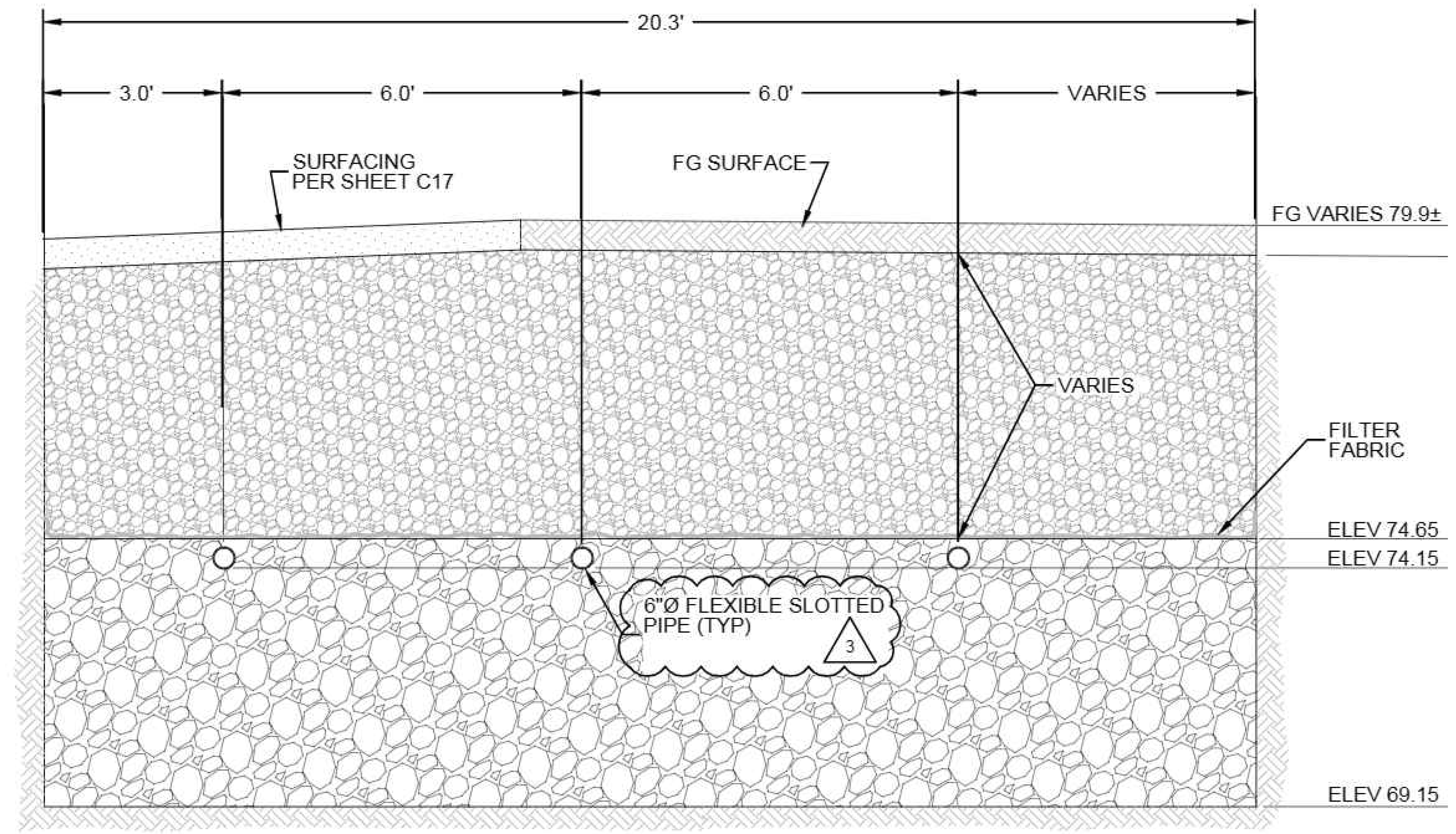

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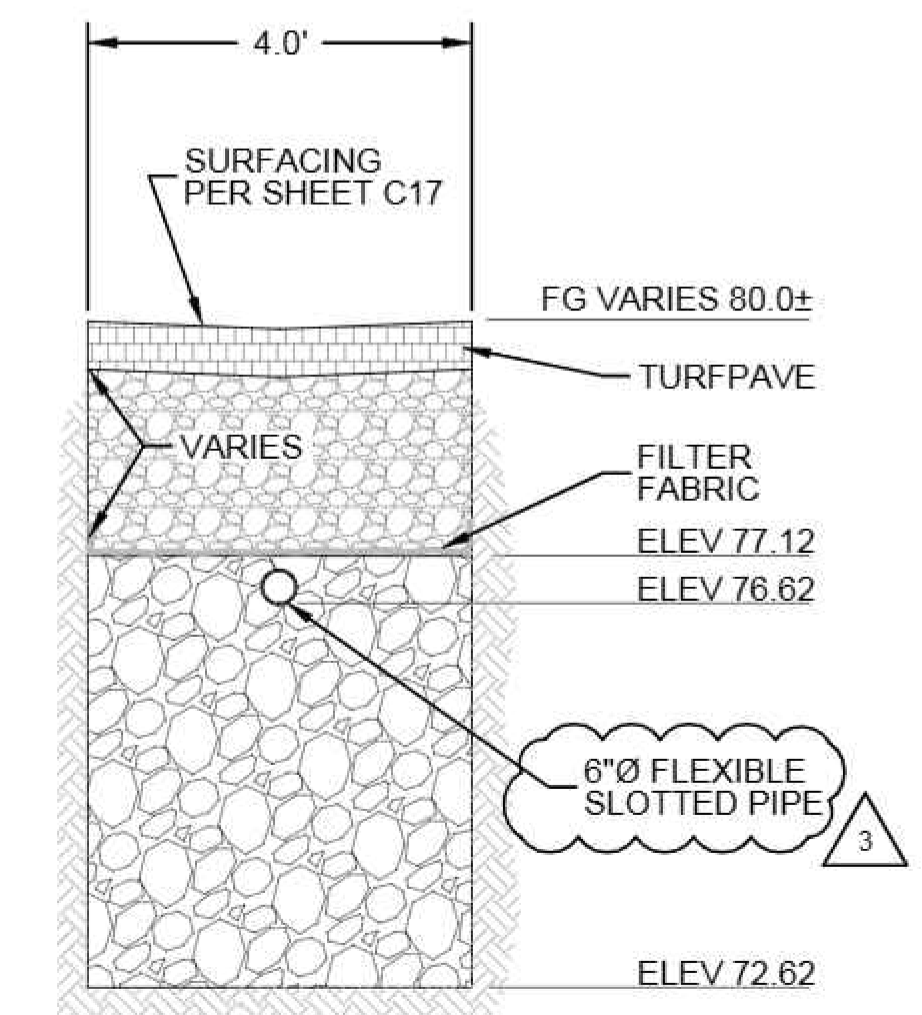
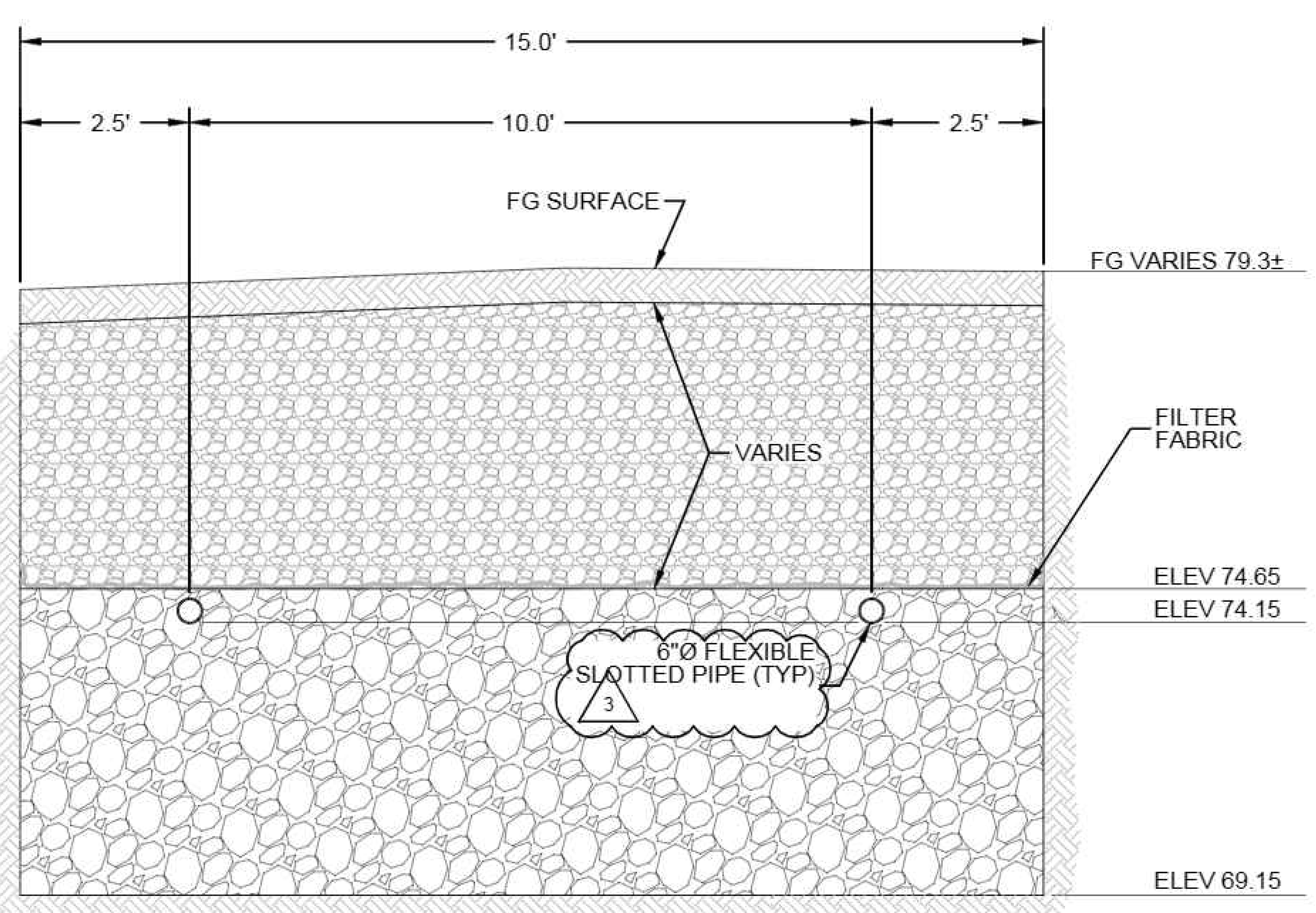


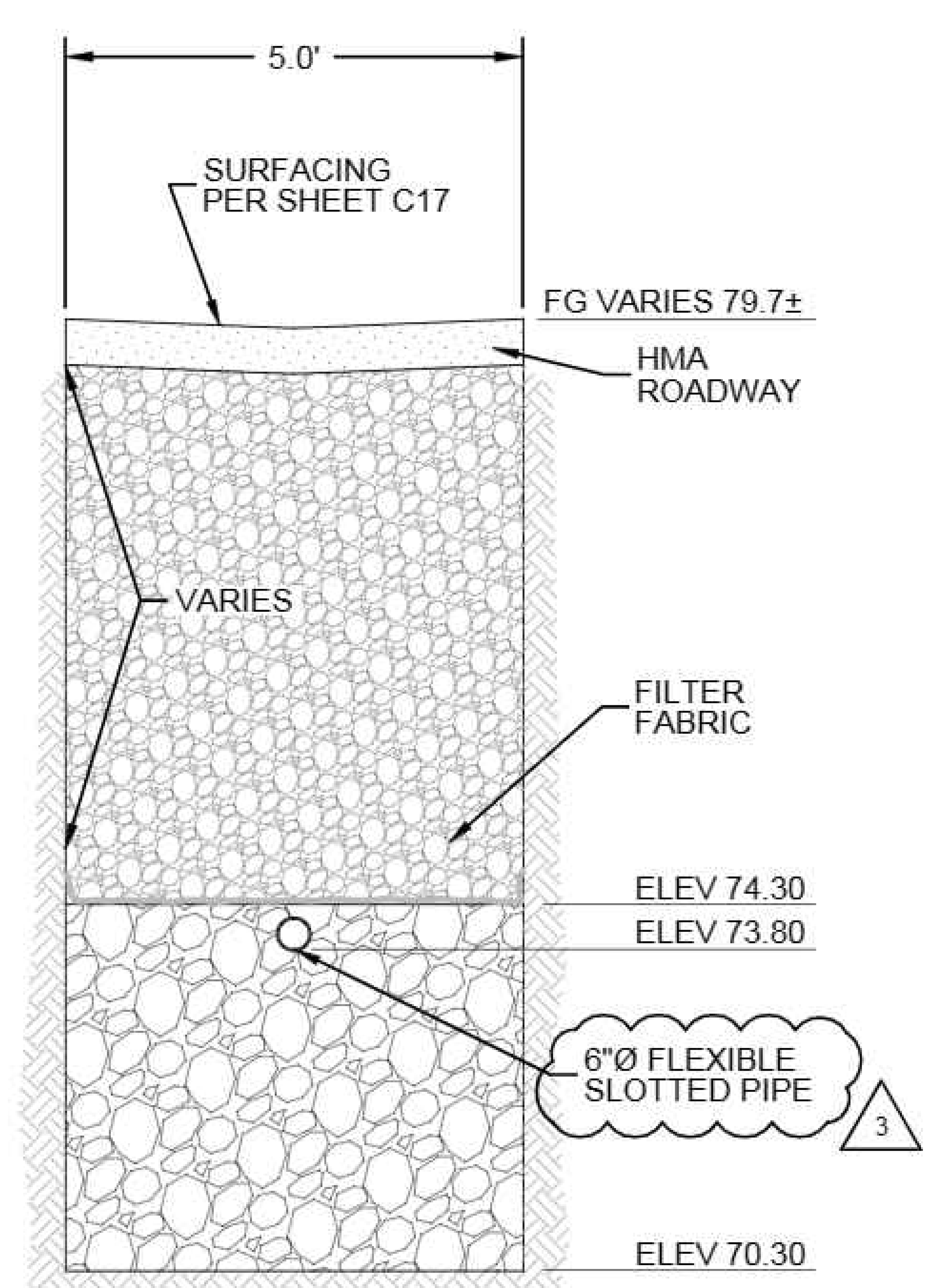
INFILTRATION SECTION K-K / C12
NOT TO SCALE

GENERAL NOTES:

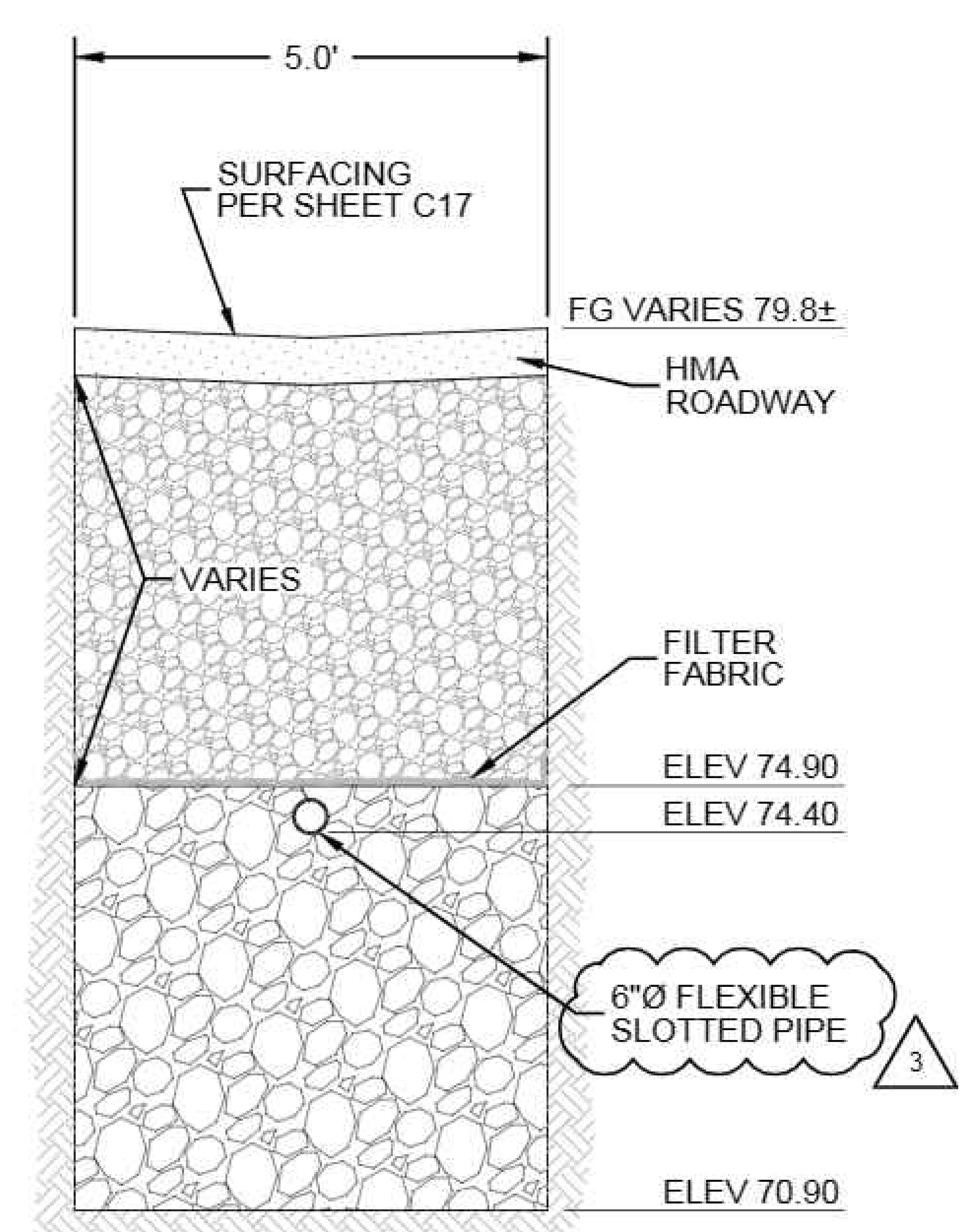
1. OUTSIDE OF THE RIGHT OF WAY, ONSITE NATIVE MATERIAL MAY BE SUITABLE FOR NON-PIPE ZONE TRENCH BACKFILL. CONFIRM WITH ONSITE GEOTECHNICAL ENGINEER.



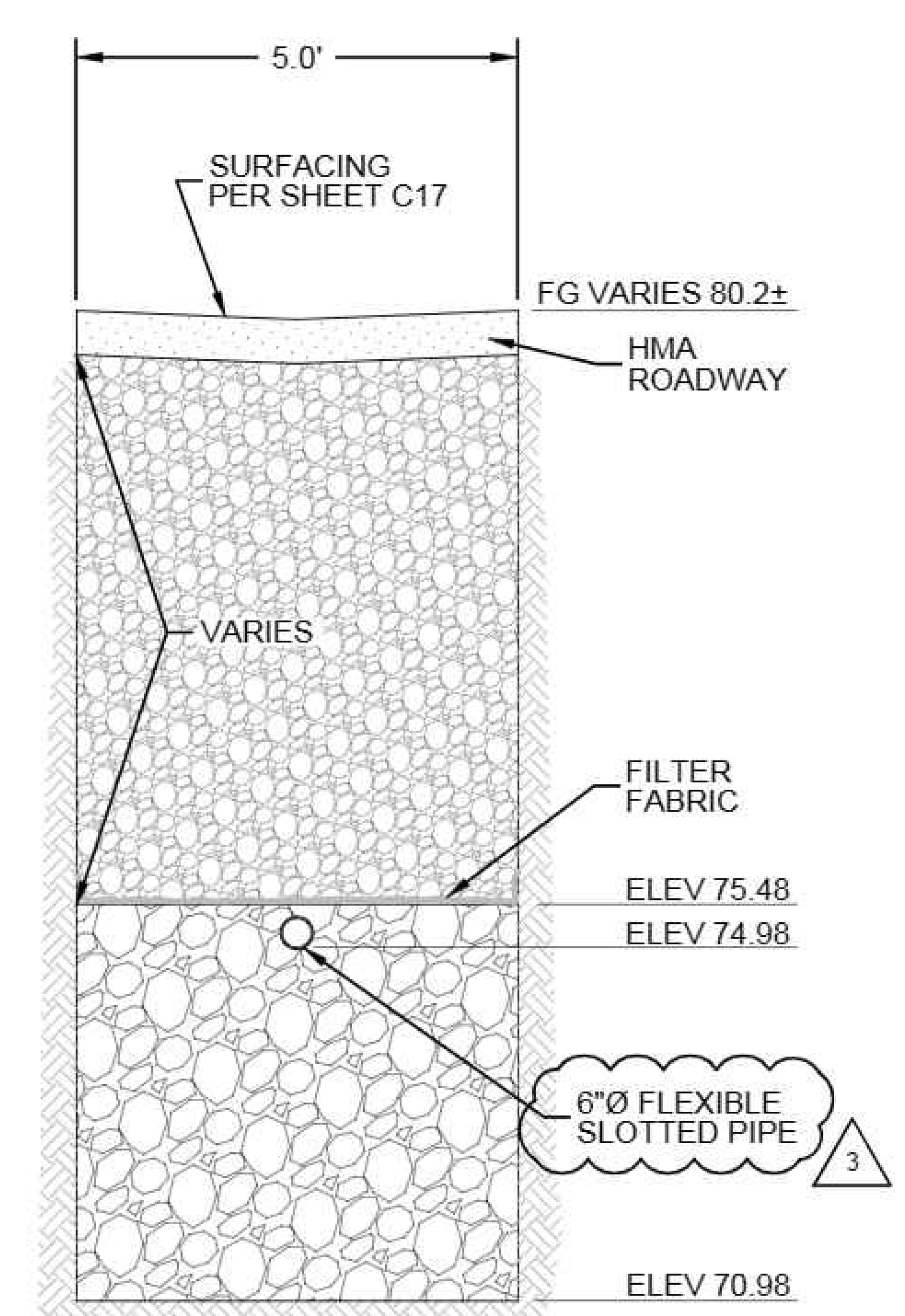
INFILTRATION SECTION L-L / C12
NOT TO SCALE



INFILTRATION SECTION M-M / C12
NOT TO SCALE



INFILTRATION SECTION N-N / C12
NOT TO SCALE



INFILTRATION SECTION P-P / C12
NOT TO SCALE

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein
Date: 2022.10.05 13:09:34 -07'00'

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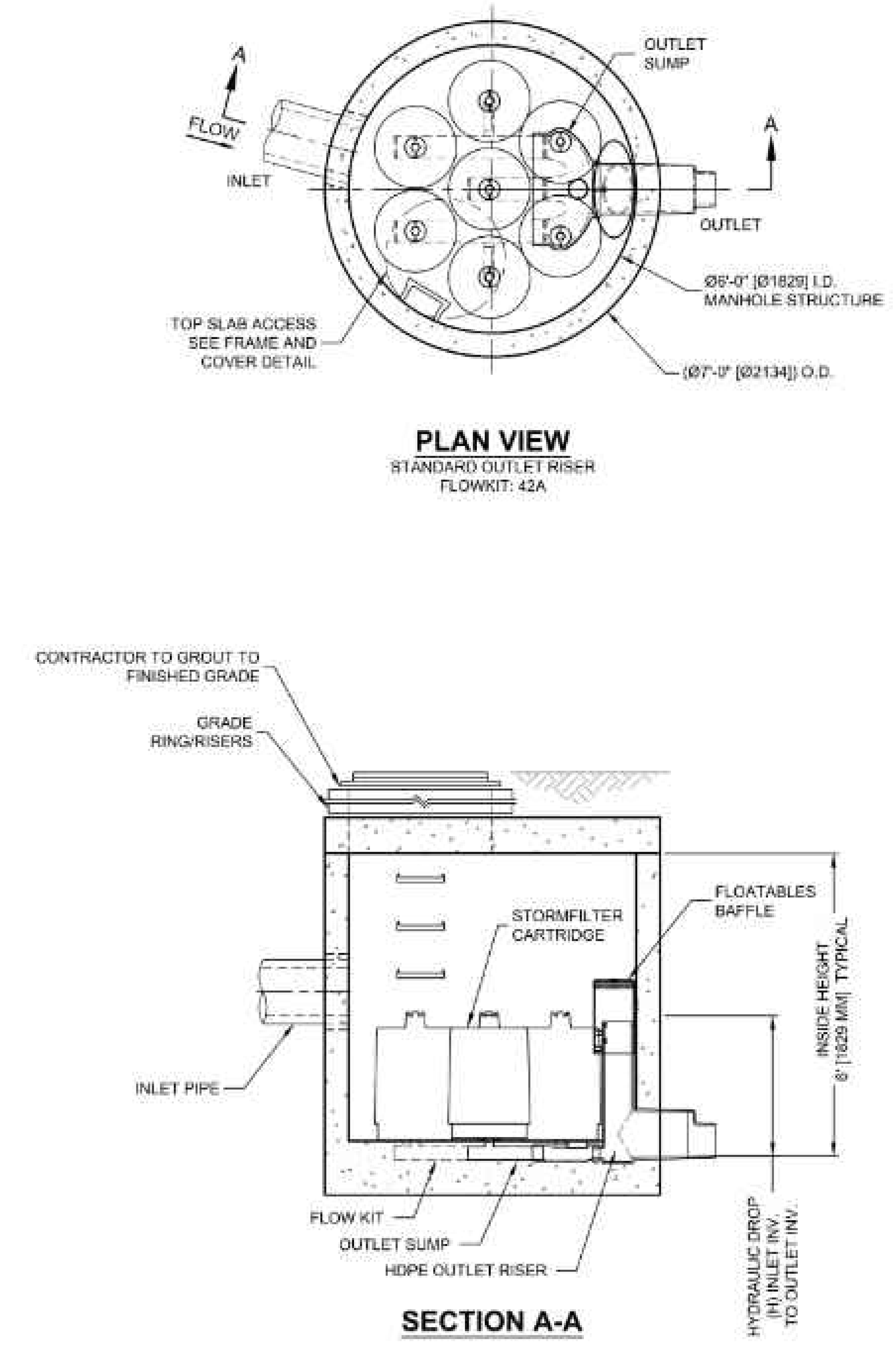
OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
DRAINAGE SECTIONS

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 / SHEET 21 OF 27

SHEET NUMBER
C21

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION_DETAILS.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/9/2022 2:00 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013



STORMFILTER DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (7). VOLUME SYSTEM IS ALSO AVAILABLE WITH MAXIMUM 7 CARTRIDGES. Ø6'-0" [1829 mm] MANHOLE STORMFILTER PEAK HYDRAULIC CAPACITY IS 1.5 CFS [42.5 L/s]. IF THE SITE CONDITIONS EXCEED 1.5 CFS [42.5 L/s] AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27" [686 mm]			18" [458 mm]			LOW DROP		
RECOMMENDED HYDRAULIC DROP (H)	3.05' [930 mm]			2.3' [700 mm]			1.8' [550 mm]		
SPECIFIC FLOW RATE (gpm/sf) [L/s/m²]	2 [1.30]	1.67* [1.08]	1 [0.65]	2 [1.30]	1.67* [1.08]	1 [0.65]	2 [1.30]	1.67* [1.08]	1 [0.65]
CARTRIDGE FLOW RATE (gpm) [L/s]	22.5 [1.42]	18.79 [1.19]	11.25 [0.71]	15 [0.95]	12.53 [0.79]	7.5 [0.44]	10 [0.63]	8.35 [0.54]	5 [0.32]

* 1.67 gpm/sf [1.08 L/s/m²] SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	SFMH#1
WATER QUALITY FLOW RATE (cfs) [L/s]	0.0879 CFS
PEAK FLOW RATE (cfs) [L/s]	0.9494 CFS
RETURN PERIOD OF PEAK FLOW (yrs)	100 YR
CARTRIDGE HEIGHT (SEE TABLE ABOVE)	18
NUMBER OF CARTRIDGES REQUIRED	6
CARTRIDGE FLOW RATE	0.0167 CFS
MEDIA TYPE (PERLITE, ZPG, PSORB)	ZPG

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	75.39	PVC	8"
OUTLET PIPE	73.09	PVC	6"

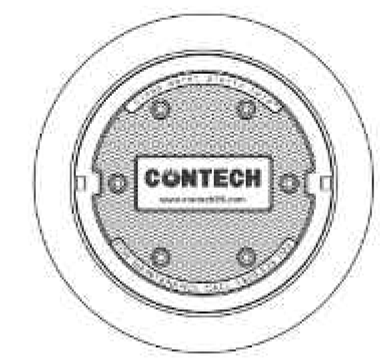
RIM ELEVATION	79.90

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

3



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR SITE SPECIFIC DRAWINGS WITH DETAILED VAULT DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' [1524 mm] AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
6. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES [178 mm]. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
7. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) [L/s] DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft)[m²].
8. STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET PIPE(S).
E. CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER STUB. STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB AND SAND COLLAR. IF OUTLET PIPE IS LARGER THAN 8 INCHES [200 mm], CONTRACTOR TO REMOVE THE 8 INCH [200 mm] OUTLET STUB AT MOLDED-IN CUT LINE. COUPLING BY FERNCO OR EQUAL AND PROVIDED BY CONTRACTOR.
F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

The Stormwater Management StormFilter®

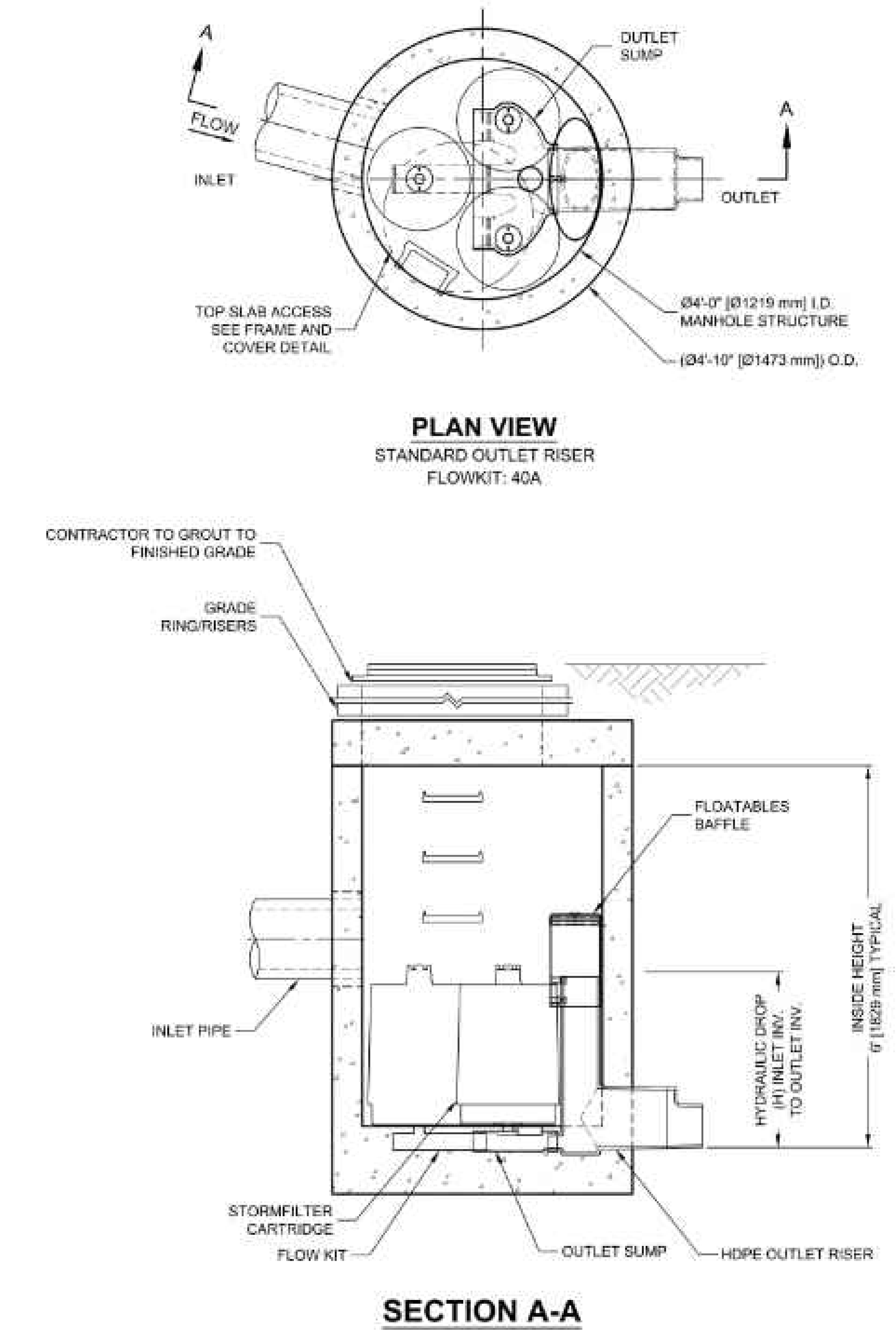
CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

SFMH72
STORMFILTER
STANDARD DETAIL

STORMFILTER VAULT STANDARD DETAIL

NOT TO SCALE

ZA / C11



STORMFILTER DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (3). VOLUME SYSTEM IS ALSO AVAILABLE WITH MAXIMUM 3 CARTRIDGES. Ø4 [1219 mm] MANHOLE STORMFILTER PEAK HYDRAULIC CAPACITY IS 1.0 CFS [28.3 L/s]. IF THE SITE CONDITIONS EXCEED 1.0 CFS [28.3 L/s] AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27" [686 mm]			18" [458 mm]			LOW DROP		
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SPECIFIC FLOW RATE (gpm/sf) [L/s/m²]	2 [1.30]	1.67* [1.08]	1 [0.65]	2 [1.30]	1.67* [1.08]	1 [0.65]	2 [1.30]	1.67* [1.08]	1 [0.65]
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* 1.67 gpm/sf [1.08 L/s/m²] SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	SFMH#2
WATER QUALITY FLOW RATE (cfs) [L/s]	0.0498 CFS
PEAK FLOW RATE (cfs) [L/s]	0.2047 CFS
RETURN PERIOD OF PEAK FLOW (yrs)	100 YR
CARTRIDGE HEIGHT (SEE TABLE ABOVE)	18
NUMBER OF CARTRIDGES REQUIRED	3
CARTRIDGE FLOW RATE	0.0167 CFS
MEDIA TYPE (PERLITE, ZPG, PSORB)	ZPG

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	76.10	PVC	8"
OUTLET PIPE	73.80	PVC	6"

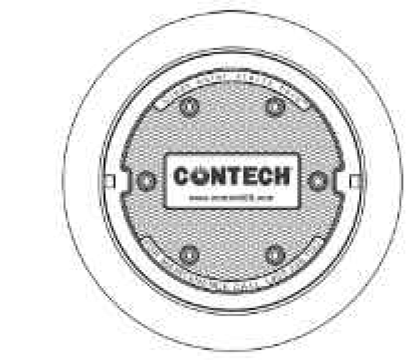
RIM ELEVATION	80.10

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

3



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR SITE SPECIFIC DRAWINGS WITH DETAILED VAULT DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' [1524 mm] AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
6. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES [178 mm]. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
7. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) [L/s] DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft)[m²].
8. STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET PIPE(S).
E. CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER STUB. STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB AND SAND COLLAR. IF OUTLET PIPE IS LARGER THAN 8 INCHES [200 mm], CONTRACTOR TO REMOVE THE 8 INCH [200 mm] OUTLET STUB AT MOLDED-IN CUT LINE. COUPLING BY FERNCO OR EQUAL AND PROVIDED BY CONTRACTOR.
F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

The Stormwater Management StormFilter®

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
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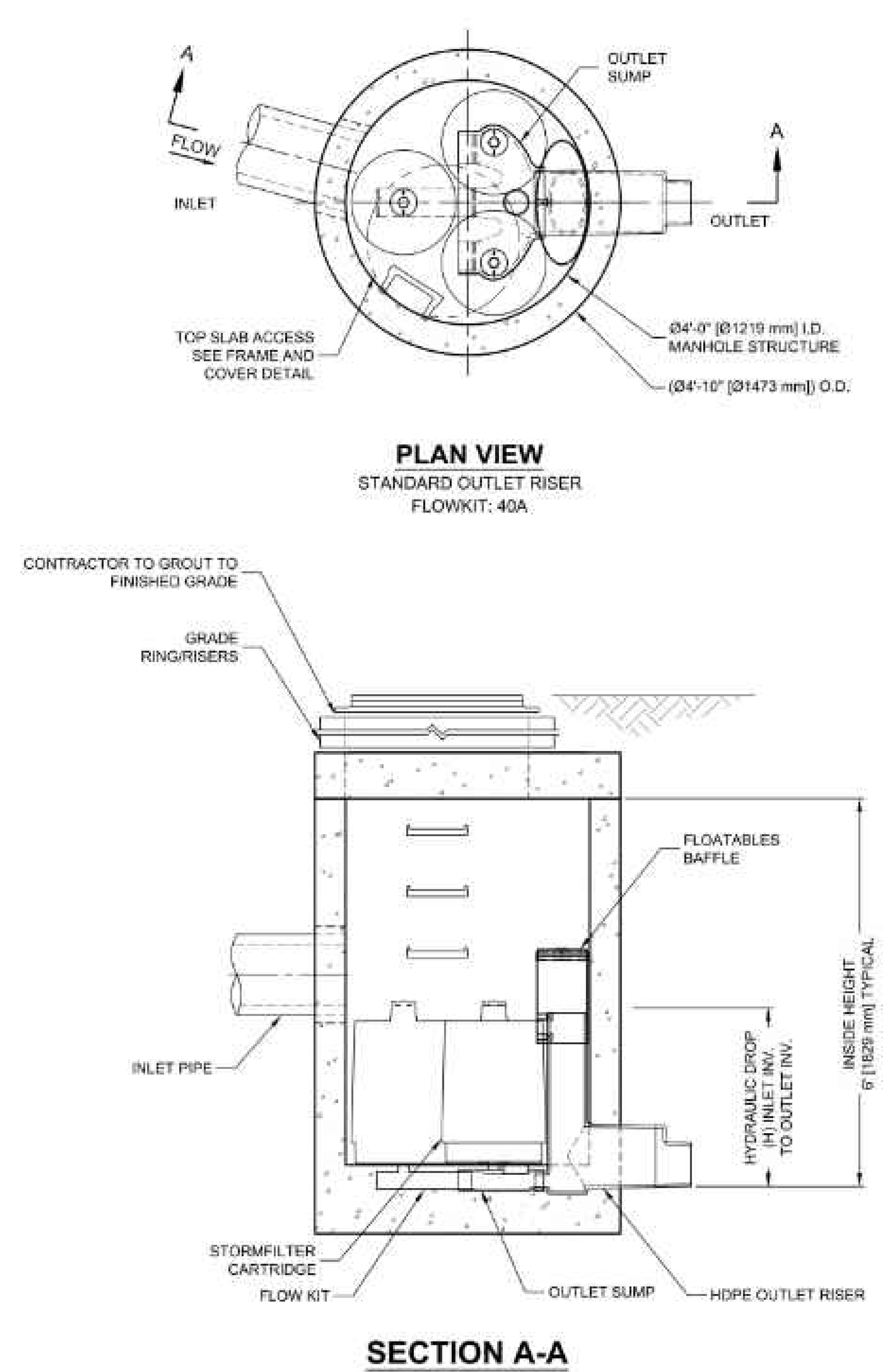
SFMH48
STORMFILTER
STANDARD DETAIL

STORMFILTER VAULT STANDARD DETAIL

NOT TO SCALE

ZB / C12



STORMFILTER DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (3). VOLUME SYSTEM IS ALSO AVAILABLE WITH MAXIMUM 3 CARTRIDGES. Ø4 [1219 mm] MANHOLE STORMFILTER PEAK HYDRAULIC CAPACITY IS 1.0 CFS [28.3 L/s]. IF THE SITE CONDITIONS EXCEED 1.0 CFS [28.3 L/s] AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27" [686 mm]			18" [458 mm]			LOW DROP		
RECOMMENDED HYDRAULIC DROP (H)	3.05' [930 mm]			2.3' [700 mm]			1.8' [550 mm]		
SPECIFIC FLOW RATE (gpm/sf) [L/s/m²]	2 [1.30]	1.67* [1.08]	1 [0.65]	2 [1.30]	1.67* [1.08]	1 [0.65]	2 [1.30]	1.67* [1.08]	1 [0.65]
CARTRIDGE FLOW RATE (gpm) [L/s]	22.5 [1.42]	18.79 [1.19]	11.25 [0.71]	15 [0.95]	12.53 [0.79]	7.5 [0.44]	10 [0.63]	8.35 [0.54]	5 [0.32]

* 1.67 gpm/sf [1.08 L/s/m²] SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	SFMH#3
WATER QUALITY FLOW RATE (cfs) [L/s]	0.0437 CFS
PEAK FLOW RATE (cfs) [L/s]	0.2112 CFS
RETURN PERIOD OF PEAK FLOW (yrs)	100 YR
CARTRIDGE HEIGHT (SEE TABLE ABOVE)	18
NUMBER OF CARTRIDGES REQUIRED	3
CARTRIDGE FLOW RATE	0.0167 CFS
MEDIA TYPE (PERLITE, ZPG, PSORB)	ZPG

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	76.10	PVC	8"
OUTLET PIPE	73.80	PVC	6"

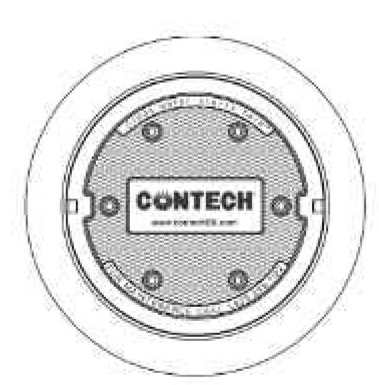
RIM ELEVATION	80.52

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

3



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

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F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

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800-338-1122 513-645-7000 513-645-7993 FAX

SFMH48
STORMFILTER
STANDARD DETAIL

STORMFILTER VAULT STANDARD DETAIL

NOT TO SCALE

ZC / C12

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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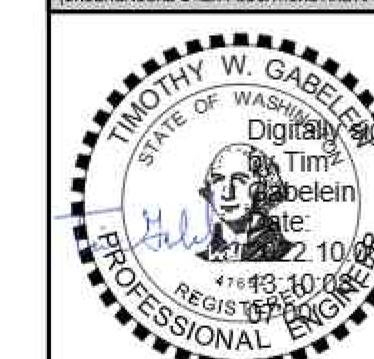


BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER:
TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT:
TOLT VILLAS
CARNATION, WA 98014
WATER QUALITY DETAILS

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 / SHEET 22 OF 27

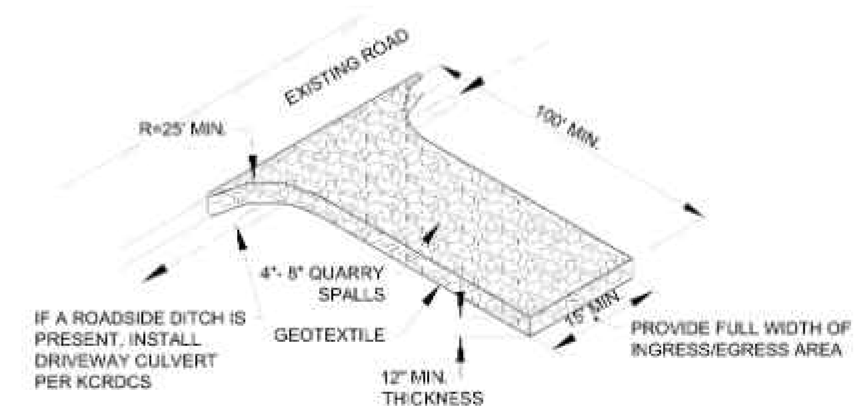
SHEET NUMBER
C22

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION_DETAILS.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/9/2022 2:00 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

cleaned by washing down the street, except when sweeping is ineffective and there is a threat to public safety. If it is necessary to wash the streets, a small sump must be constructed. The sediment would then be washed into the sump where it can be controlled. Wash water must be pumped back onto the *site* and cannot discharge to systems tributary to surface waters.

4. Any quarry spalls that are loosened from the pad and end up on the roadway shall be removed immediately.

FIGURE C.3.1.A STABILIZED CONSTRUCTION ENTRANCE



NOTES:

- PER KING COUNTY ROAD DESIGN AND CONSTRUCTION STANDARDS (KCRDCS), DRIVEWAYS SHALL BE PAVED TO EDGE OF R-O-W PRIOR TO INSTALLATION OF THE CONSTRUCTION ENTRANCE TO AVOID DAMAGING OF THE ROADWAY.
- IT IS RECOMMENDED THAT THE ENTRANCE BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD.

CONSTRUCTION ENTRANCE (CE / C06)
NOT TO SCALE

FIGURE C.3.6.A SILT FENCE

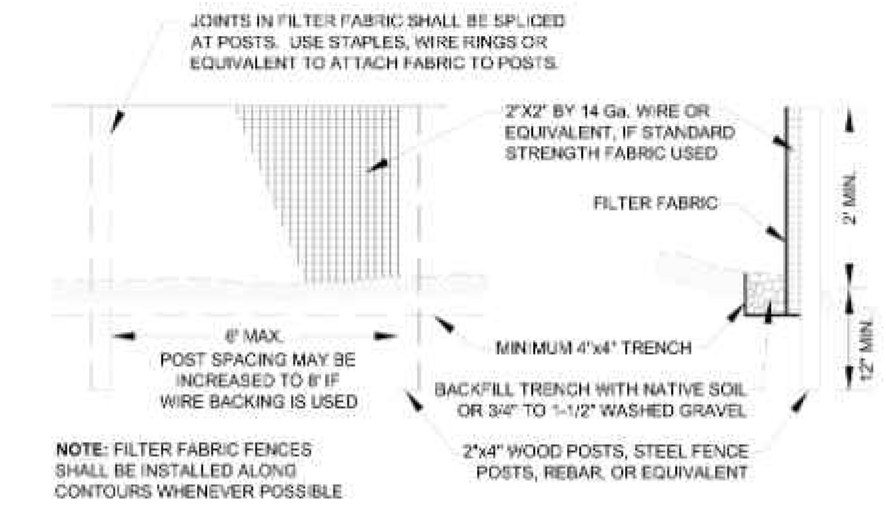
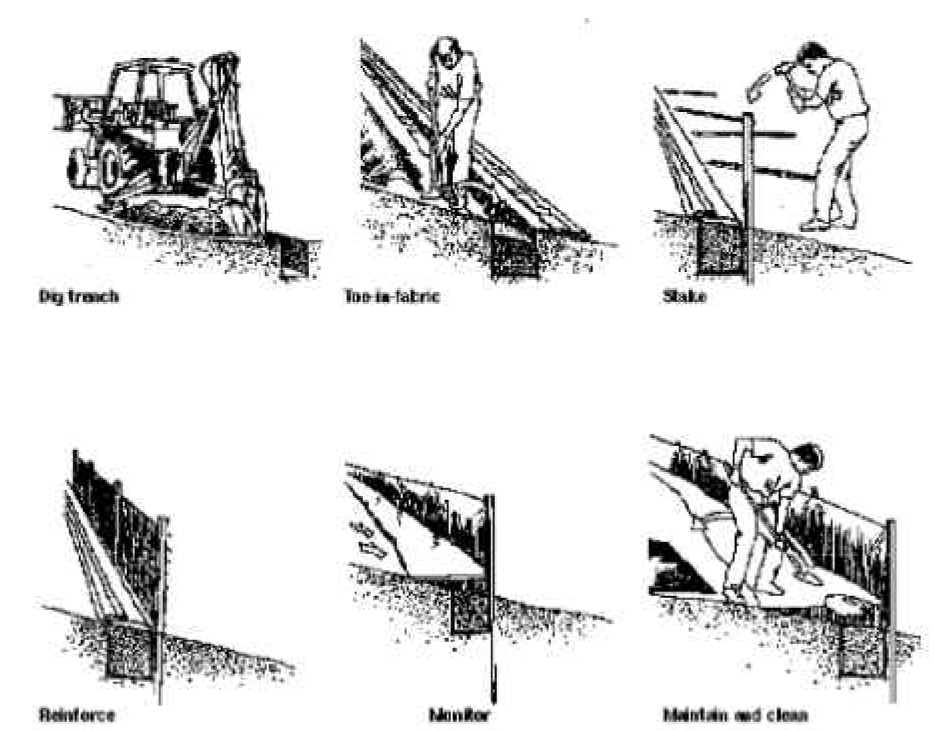


FIGURE C.3.6.B SILT FENCE INSTALLATION AND MAINTENANCE

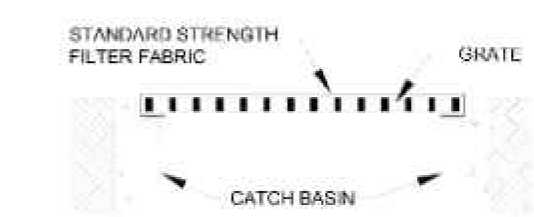


SILT FENCE DETAILS (FF / C06)
NOT TO SCALE

Maintenance Standards

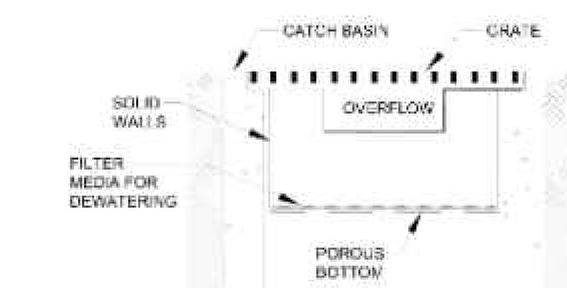
1. Any accumulated sediment on or around inlet protection shall be removed immediately. Sediment shall not be removed with water, and all sediment must be disposed of as fill on site or hauled off site.
2. Any sediment in the catch basin insert shall be removed when the sediment has filled one-third of the available storage. The filter media for the insert shall be cleaned or replaced at least monthly.
3. Regular maintenance is critical for all forms of catch basin/inlet protection. Unlike many forms of protection that fail gradually, catch basin protection will fail suddenly and completely if not maintained properly.

FIGURE C.3.9.A FILTER FABRIC PROTECTION



NOTE: ONLY TO BE USED WHERE PONDING OF WATER ABOVE THE CATCH BASIN WILL NOT CAUSE TRAFFIC PROBLEMS AND WHERE OVERFLOW WILL NOT RESULT IN EROSION OF SLOPES.

FIGURE C.3.9.B CATCH BASIN INSERT



NOTE: THIS DETAIL IS ONLY SCHEMATIC. ANY INSERT IS ALLOWED THAT HAS:
- A MIN. 0.5 C.F. OF STORAGE,
- THE MEANS TO DEWATER THE STORED SEDIMENT,
- AN OVERFLOW, AND
- CAN BE EASILY MAINTAINED.

TEMPORARY INLET PROTECTION (SDI / C06)
NOT TO SCALE

conditions. Also, as the County gains more experience with the maintenance and operation of these BMPs, future updates to the instructions will be posted on King County's *Surface Water Design Manual* website.

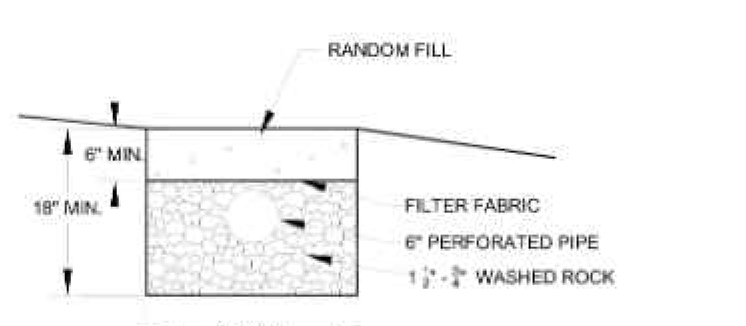
A reproducible copy of the instructions, prepared for inclusion with the declaration of covenant, is located in Reference M.

❑ TEXT OF INSTRUCTIONS

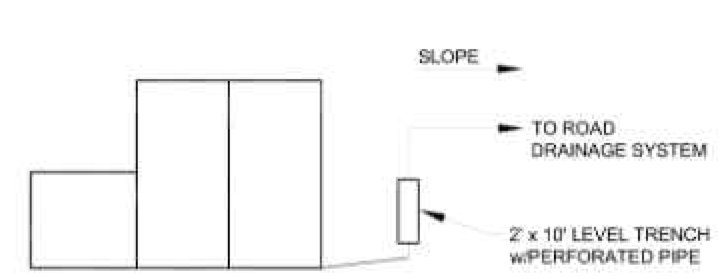
Your property contains a stormwater management flow control BMP (best management practice) called a "perforated pipe connection," which was installed to reduce the stormwater runoff impacts of some or all of the impervious surface on your property. A perforated pipe connection is a length of drainage conveyance pipe with holes in the bottom, designed to "leak" runoff, conveyed by the pipe, into a gravel filled trench where it can be soaked into the surrounding soil. The connection is intended to provide opportunity for infiltration of any runoff that is being conveyed from an impervious surface (usually a roof) to a local drainage system such as a ditch or roadway pipe system.

The size and composition of the perforated pipe connection as depicted by the flow control BMP site plan and design details must be maintained and may not be changed without written approval either from the King County Water and Land Resources Division or through a future development permit from King County. The soil overtop of the perforated portion of the system must not be compacted or covered with impervious materials.

FIGURE C.2.11.A PERFORATED PIPE CONNECTION FOR A SINGLE FAMILY RESIDENCE

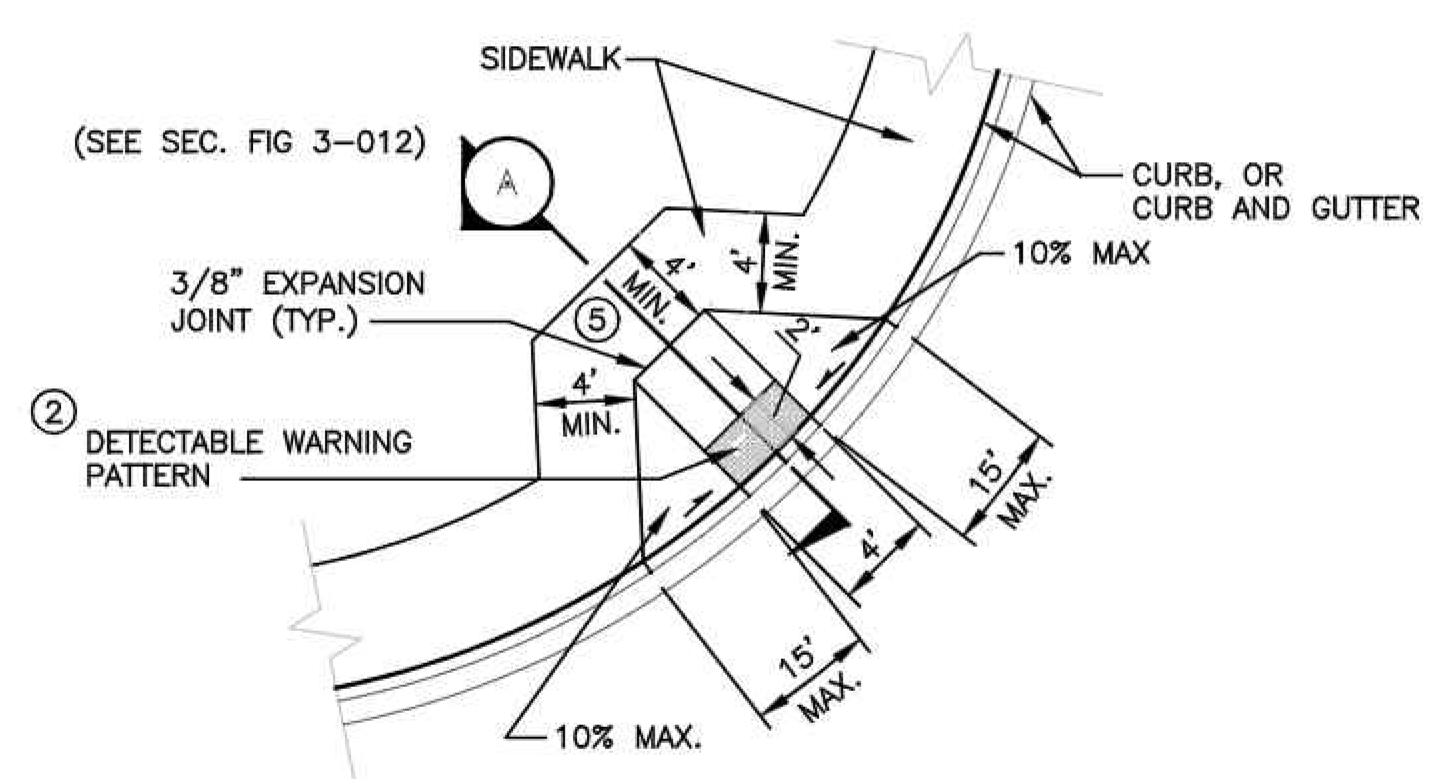


TRENCH X-SECTION
NTS



PLAN VIEW OF ROOF
NTS

ROOF INFILTRATION TRENCH (F / C06)
NOT TO SCALE



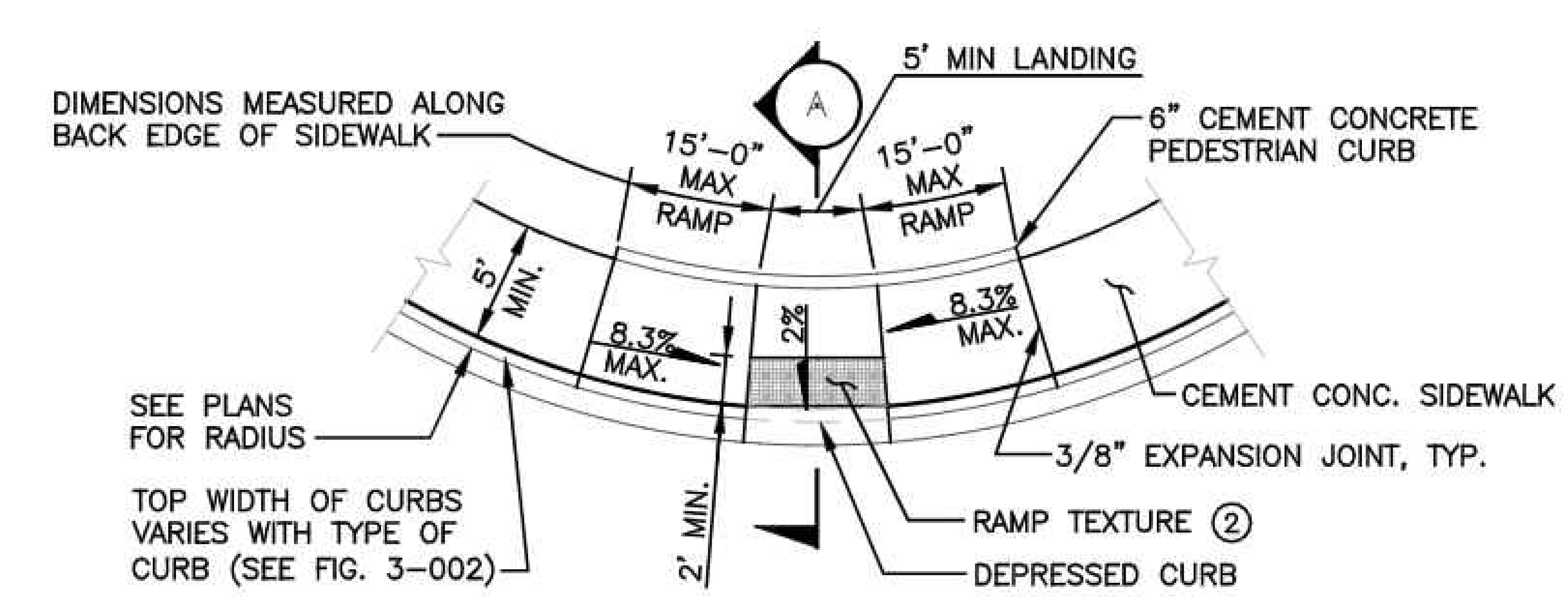
CURB RAMP 1A (6)

NOTES:

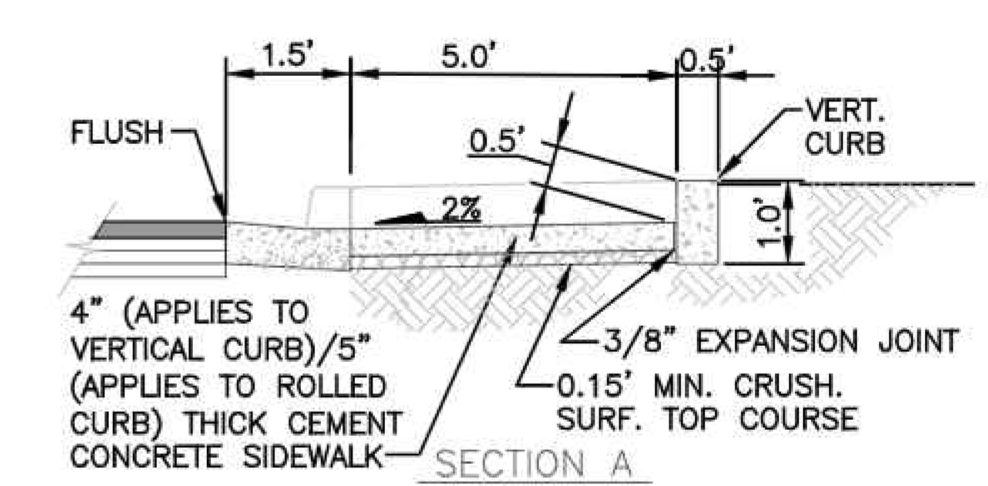
1. PLACEMENT OF GRATINGS, ACCESS COVERS AND OTHER APPURTENANCES SHALL NOT BE LOCATED ON CURB RAMPS, LANDINGS AND GUTTERS WITHIN THE PEDESTRIAN ACCESS ROUTE.
2. RAMPS SHALL BE TEXTURED USING TRUNCATED DOME PATTERN (SEE WSDOT STANDARDS). DETECTABLE WARNING PATTERN SHALL BE YELLOW IN COMPLIANCE WITH WSDOT STANDARD SPECIFICATION 8–14.3(3)
3. RAMP CENTER LINE SHALL BE PERPENDICULAR TO OR RADIAL TO CURB RETURNS UNLESS OTHERWISE APPROVED BY THE COUNTY ROAD ENGINEER.
4. RAMPS SHALL BE CONSTRUCTED AT CORRESPONDING SIDEWALK LOCATIONS ON OPPOSITE SIDE OF STREETS WHEN RAMPS ARE CONSTRUCTED ON ONE SIDE OF STREET. SEE FIG. 3–010.
5. LANDING SHALL BE MINIMUM 4' X 4'.
6. CURB RAMP 1A MUST BE INSTALLED UNLESS OTHERWISE APPROVED.
7. SEE FIGURE 3–001 FOR CURB AND SIDEWALK JOINT PLACEMENT.

CURB RAMP 1A FIG. 3-011

PERPENDICULAR ADA RAMP (G / C20)
NOT TO SCALE



CURB RAMP 2A



SECTION A

NOTES:

1. PLACEMENT OF GRATINGS, ACCESS COVERS AND OTHER APPURTENANCES SHALL NOT BE LOCATED ON CURB RAMPS, LANDINGS AND GUTTERS WITHIN THE PEDESTRIAN ACCESS ROUTE.
2. RAMPS SHALL BE TEXTURED USING TRUNCATED DOME PATTERN (SEE WSDOT STANDARDS). DETECTABLE WARNING PATTERN SHALL BE YELLOW IN COMPLIANCE WITH WSDOT STANDARD SPECIFICATION 8–14.3(3)
3. RAMP CENTER LINE SHALL BE PERPENDICULAR TO OR RADIAL TO CURB RETURNS UNLESS OTHERWISE APPROVED BY THE COUNTY ROAD ENGINEER.
4. RAMPS SHALL BE CONSTRUCTED AT CORRESPONDING SIDEWALK LOCATIONS ON OPPOSITE SIDE OF STREETS WHEN RAMPS ARE CONSTRUCTED ON ONE SIDE OF STREET. SEE FIG. 3–010.
5. THIS DETAIL APPLIES TO BOTH ROLLED AND VERTICAL CURB ROADWAYS.
6. SEE FIGURE 3–001 FOR CURB AND SIDEWALK JOINT PLACEMENT.

CURB RAMP 2A, FIG. 3-015

PARALLEL ADA RAMP (H / C20)
NOT TO SCALE

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein
Date: 2022.10.03 13:11:06 -07'00'

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

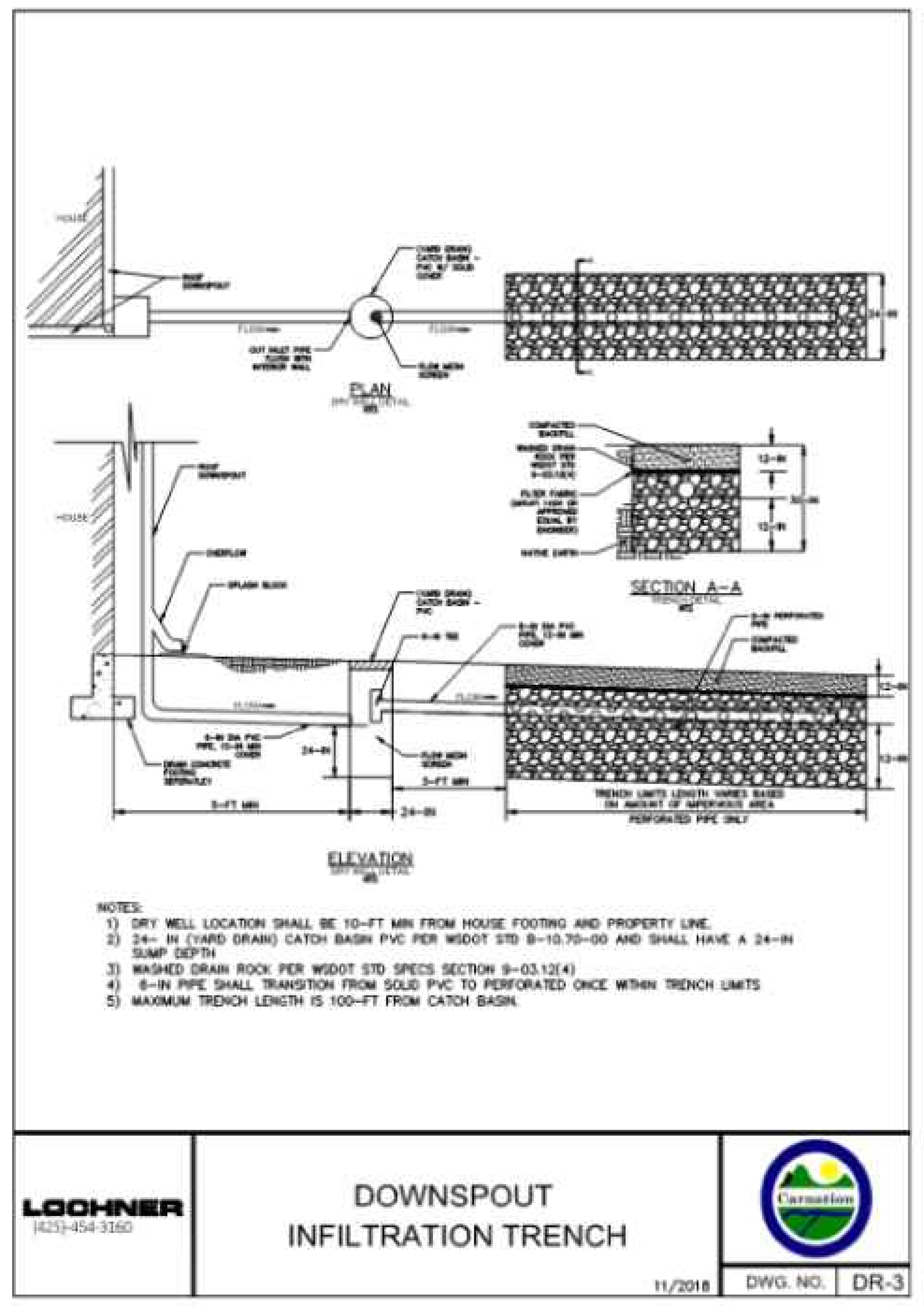
PROJECT: TOLT VILLAS
CARNATION, WA 98014
DETAILS

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 — SHEET 23 OF 27

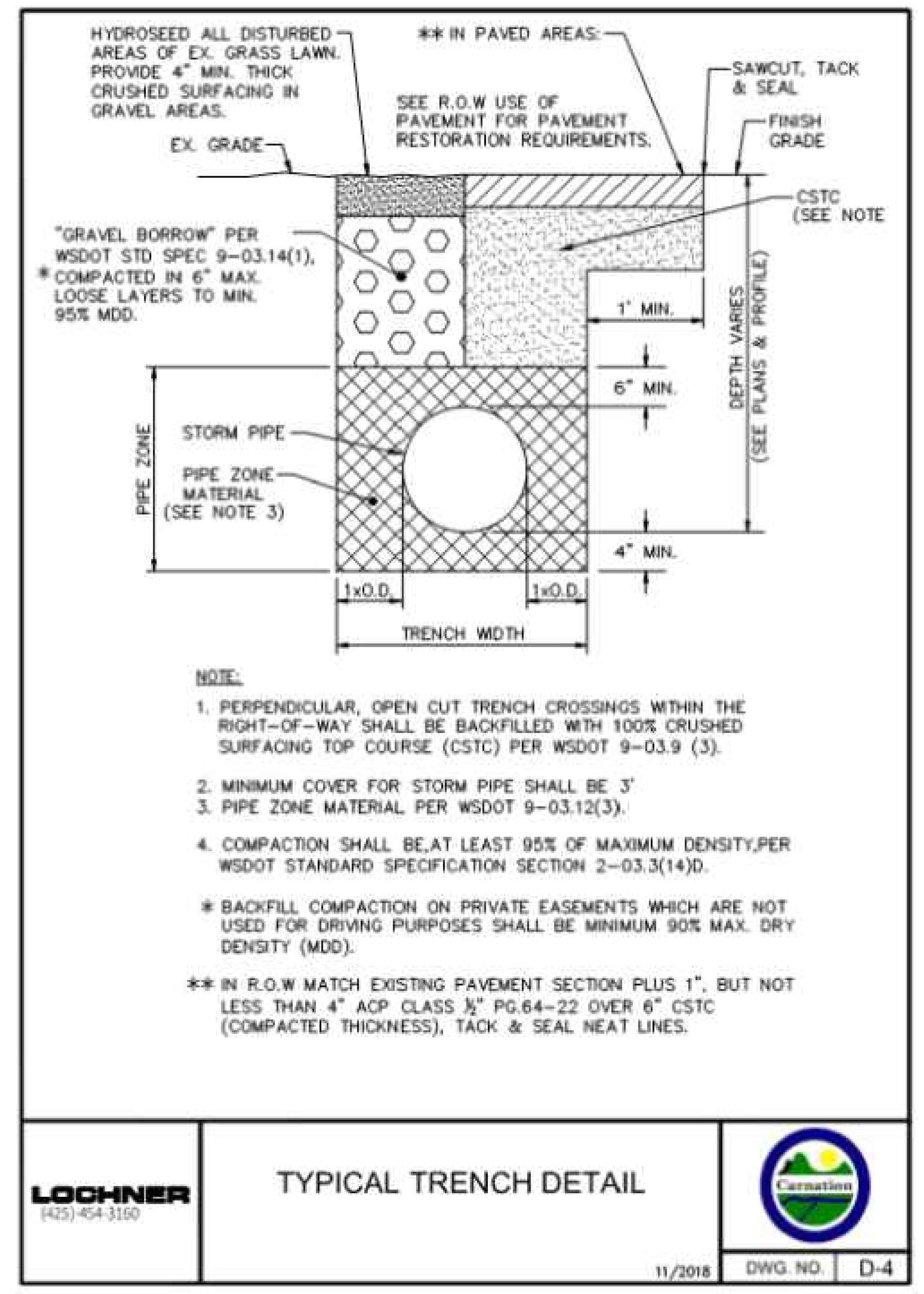
SHEET NUMBER
C23

GENERAL NOTES:

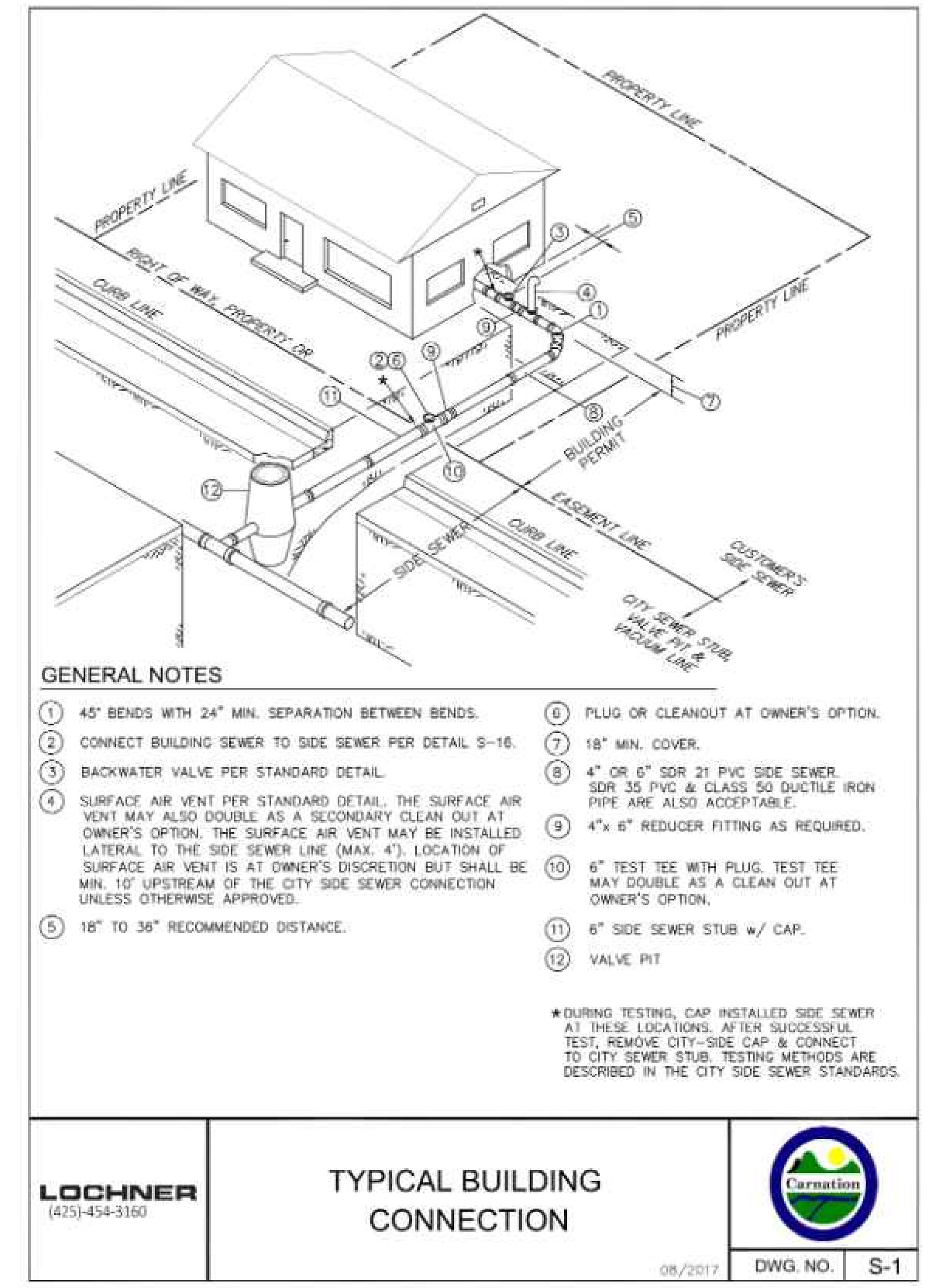
1. OUTSIDE OF THE RIGHT OF WAY, ONSITE NATIVE MATERIAL MAY BE SUITABLE FOR NON-PIPE ZONE TRENCH BACKFILL. CONFIRM WITH ONSITE GEOTECHNICAL ENGINEER.



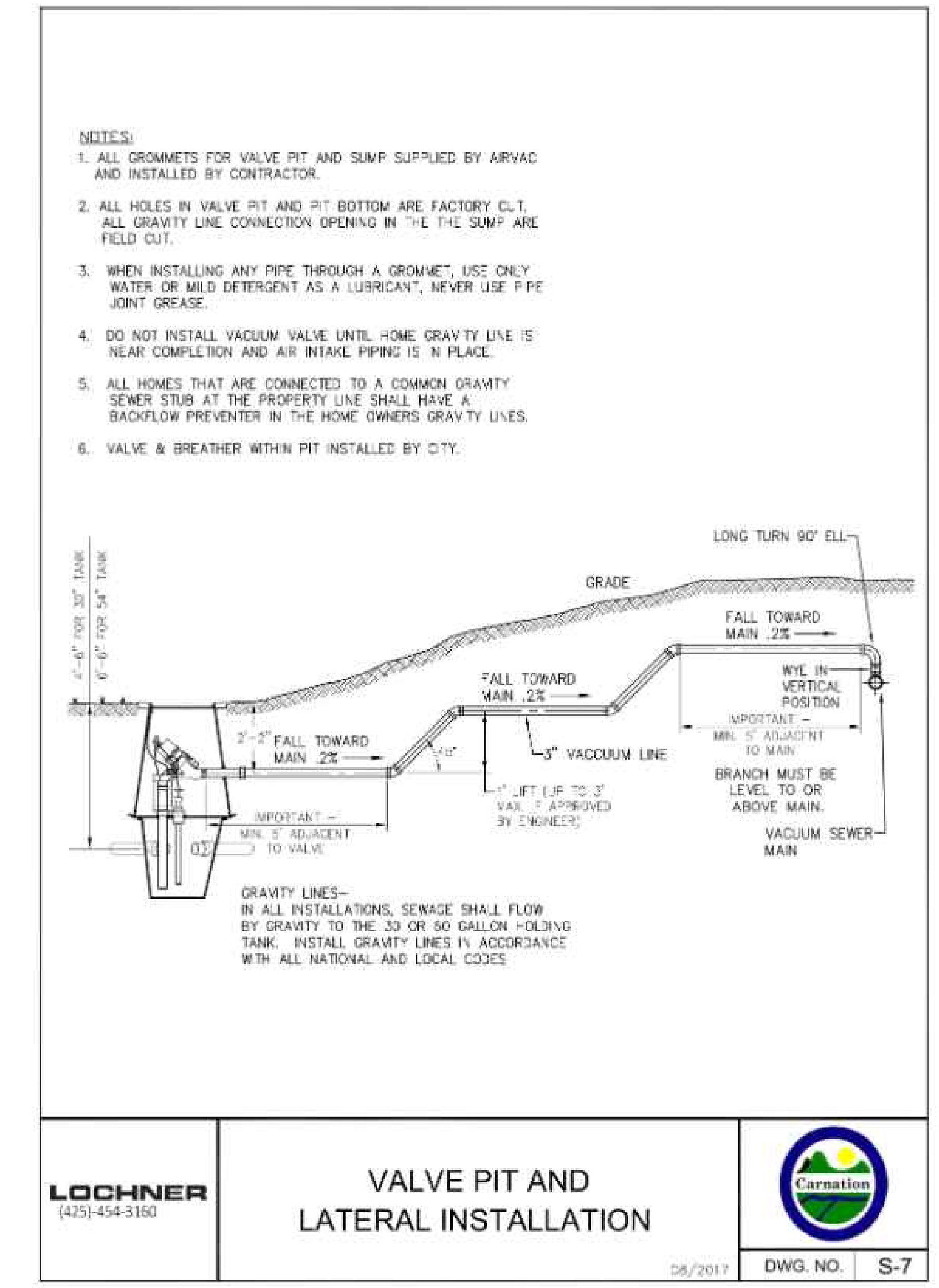
DOWNSPOUT INFILTRATION TRENCH (K, C11&C12)
NOT TO SCALE



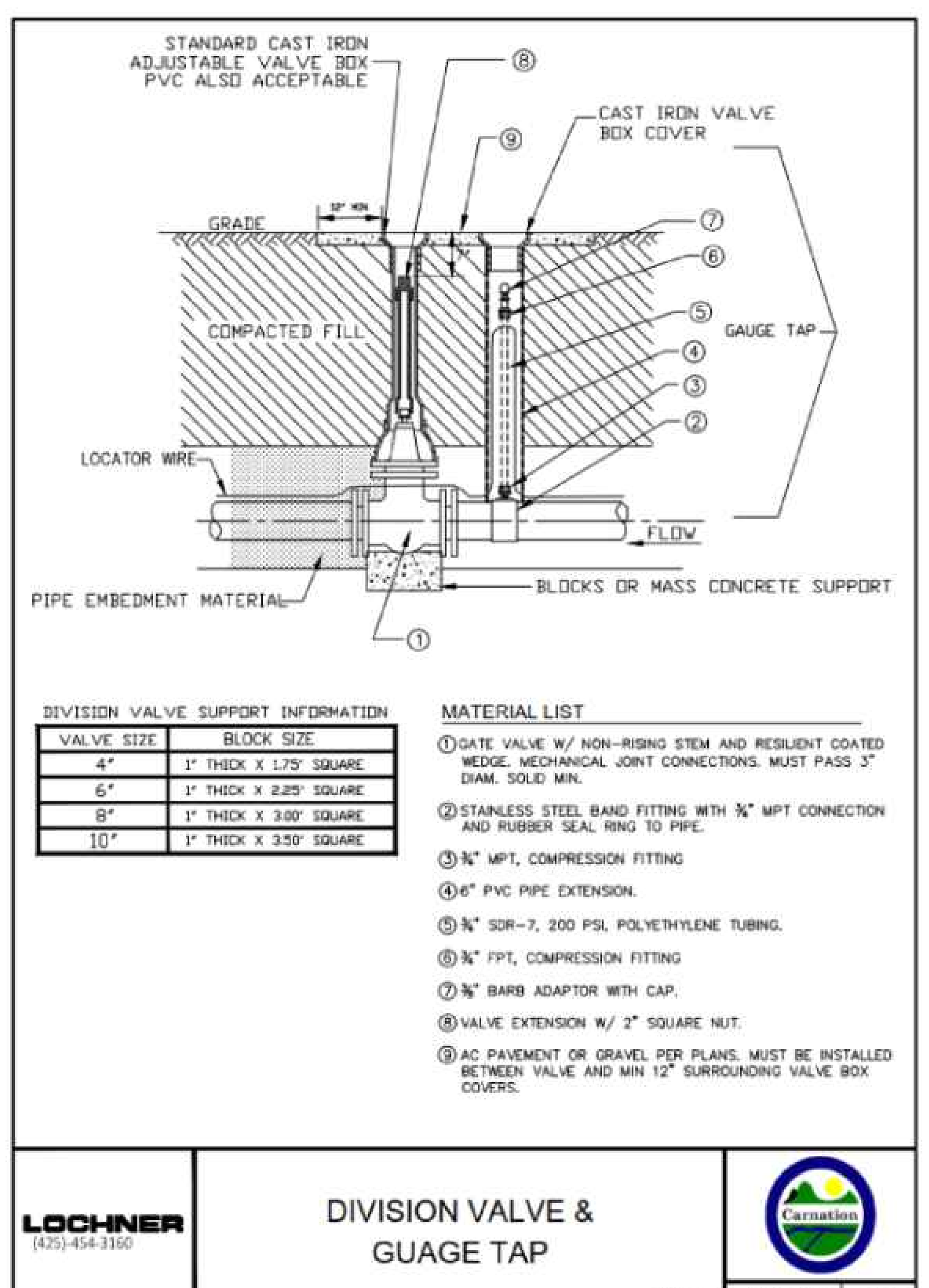
TYPICAL TRENCH DETAIL (L, C11&C12)
NOT TO SCALE



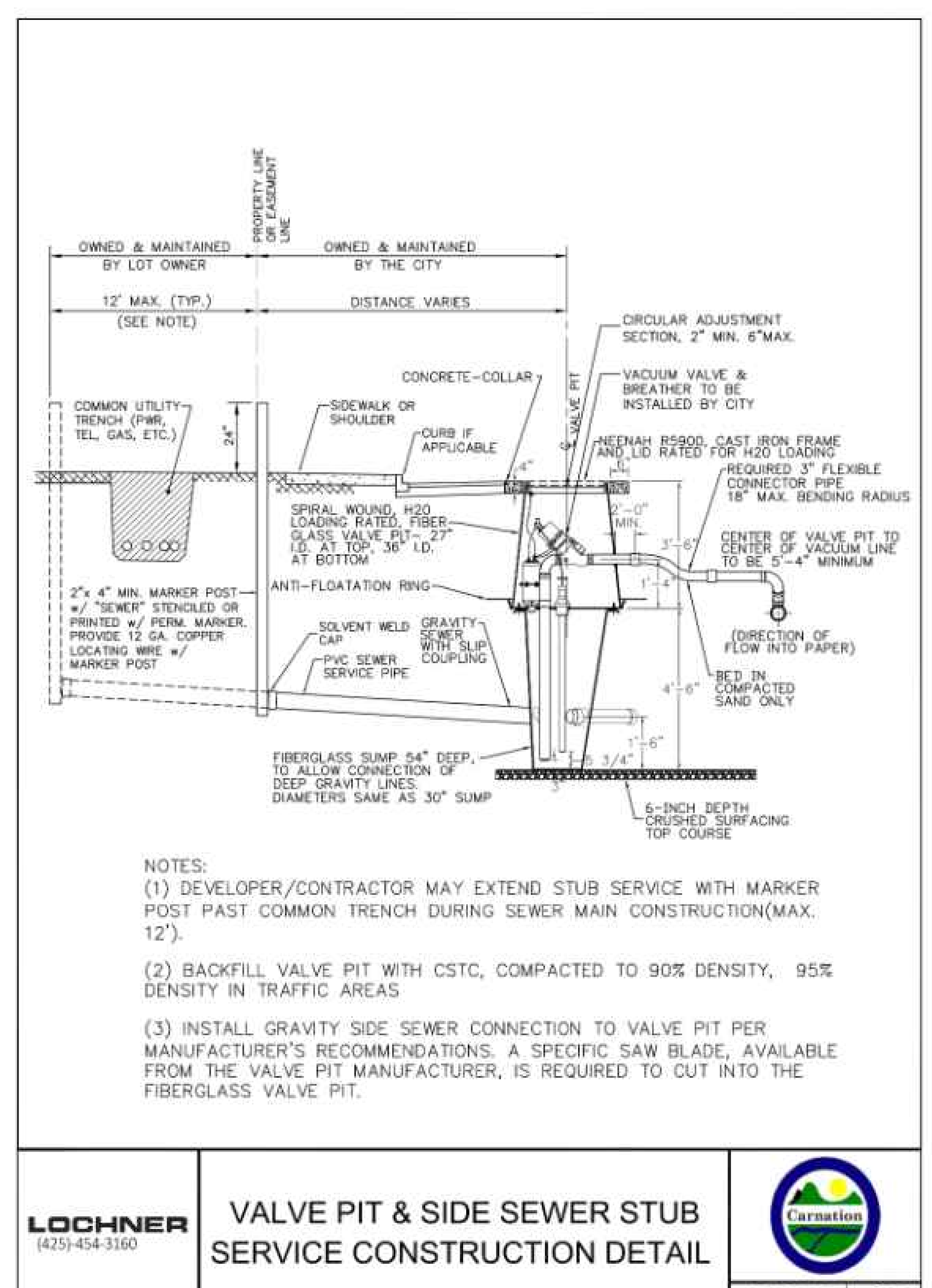
TYPICAL BUILDING CONNECTION (M, C13)
NOT TO SCALE



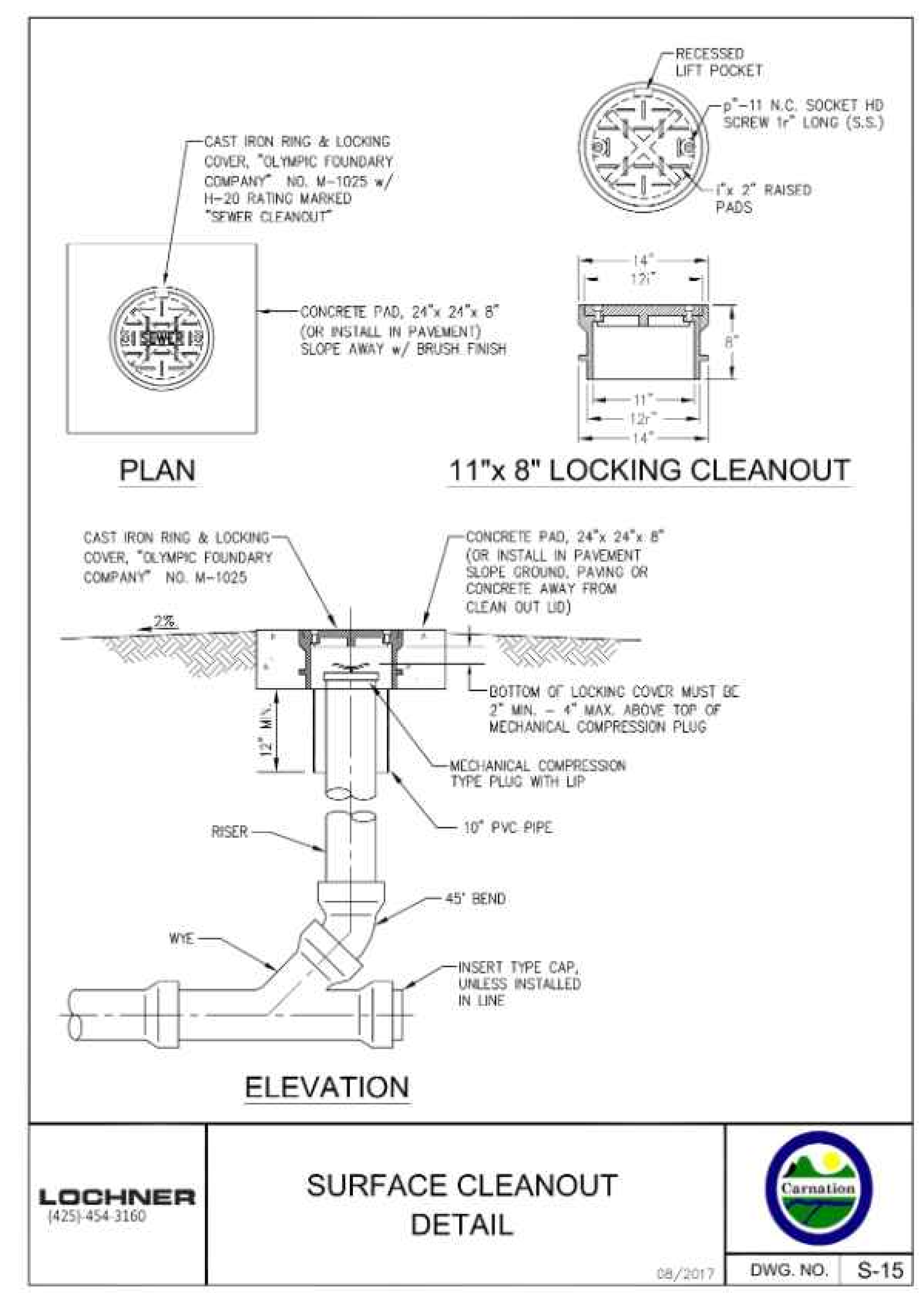
VALVE PIT & LATERAL INSTALLATION (N, C13)
NOT TO SCALE



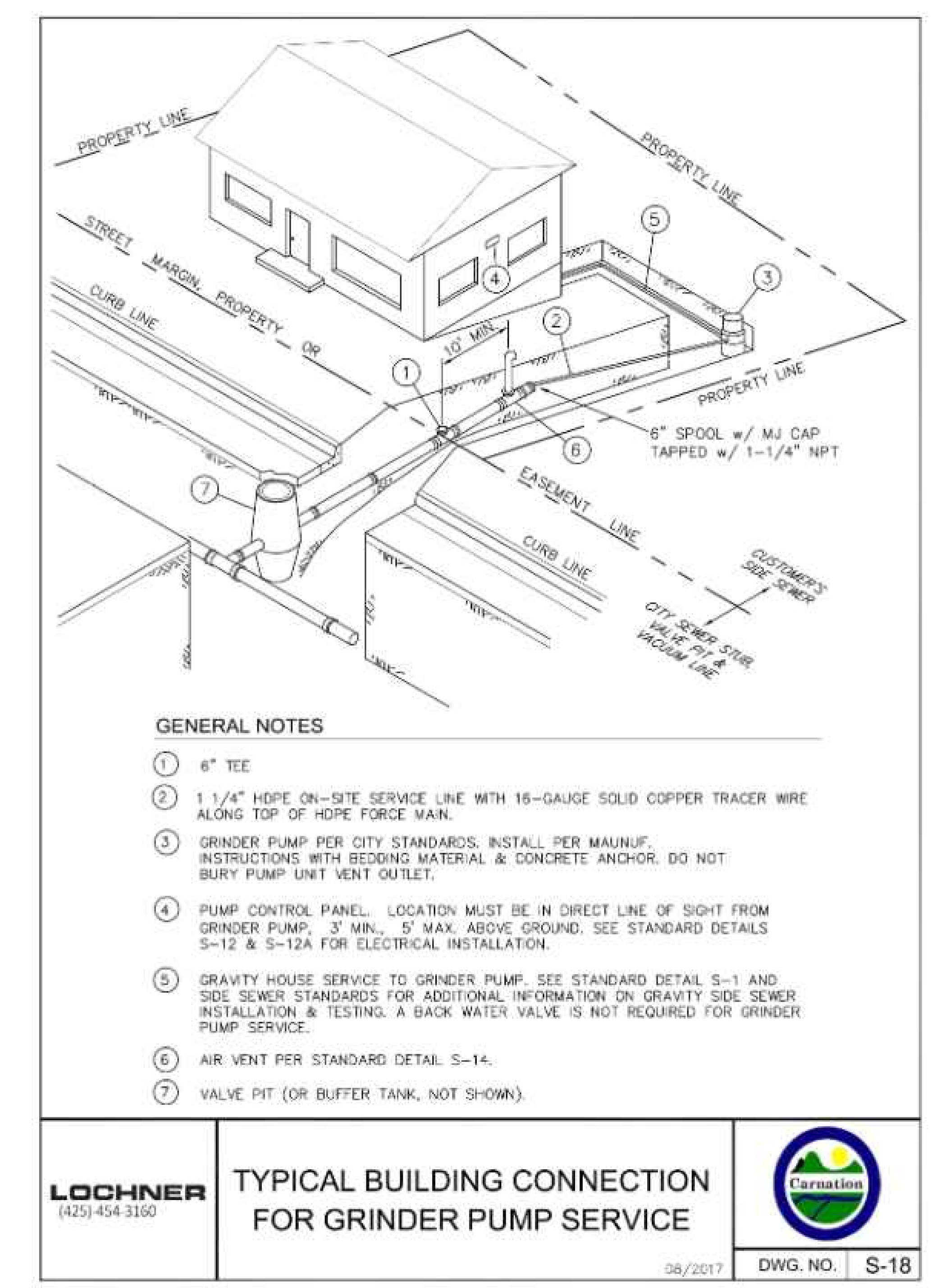
DIVISION VALVE DETAIL (O, C13)
NOT TO SCALE



VALVE PIT & SIDE SEWER STUB SERVICE CONSTRUCTION DETAIL (P, C13)
NOT TO SCALE



SURFACE CLEANOUT DETAIL (Q, C13)
NOT TO SCALE



TYPICAL BUILDING CONNECTION FOR GRINDER PUMP SERVICE (R, C13)
NOT TO SCALE

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
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3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein

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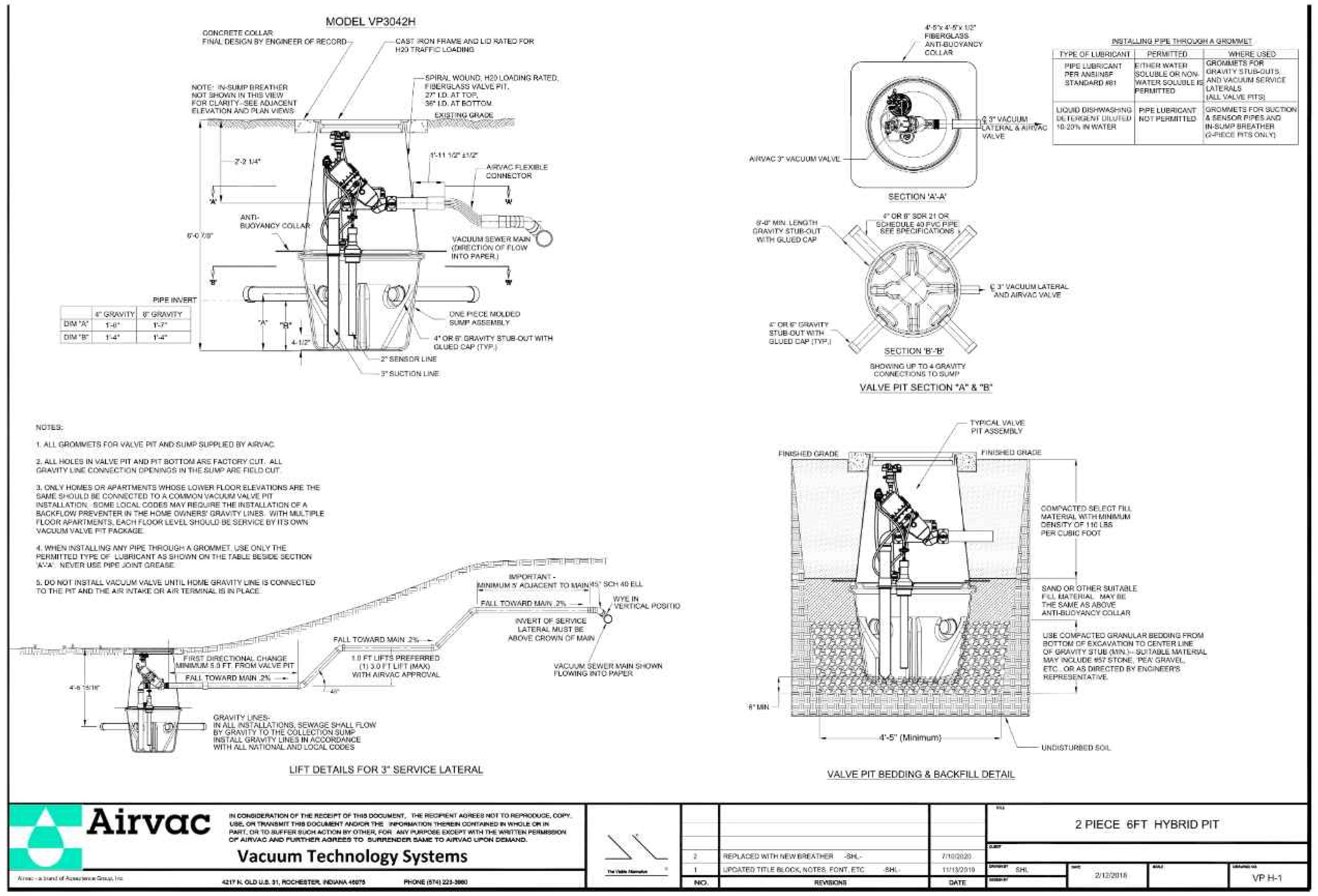
OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
DETAILS

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 — SHEET 24 OF 27

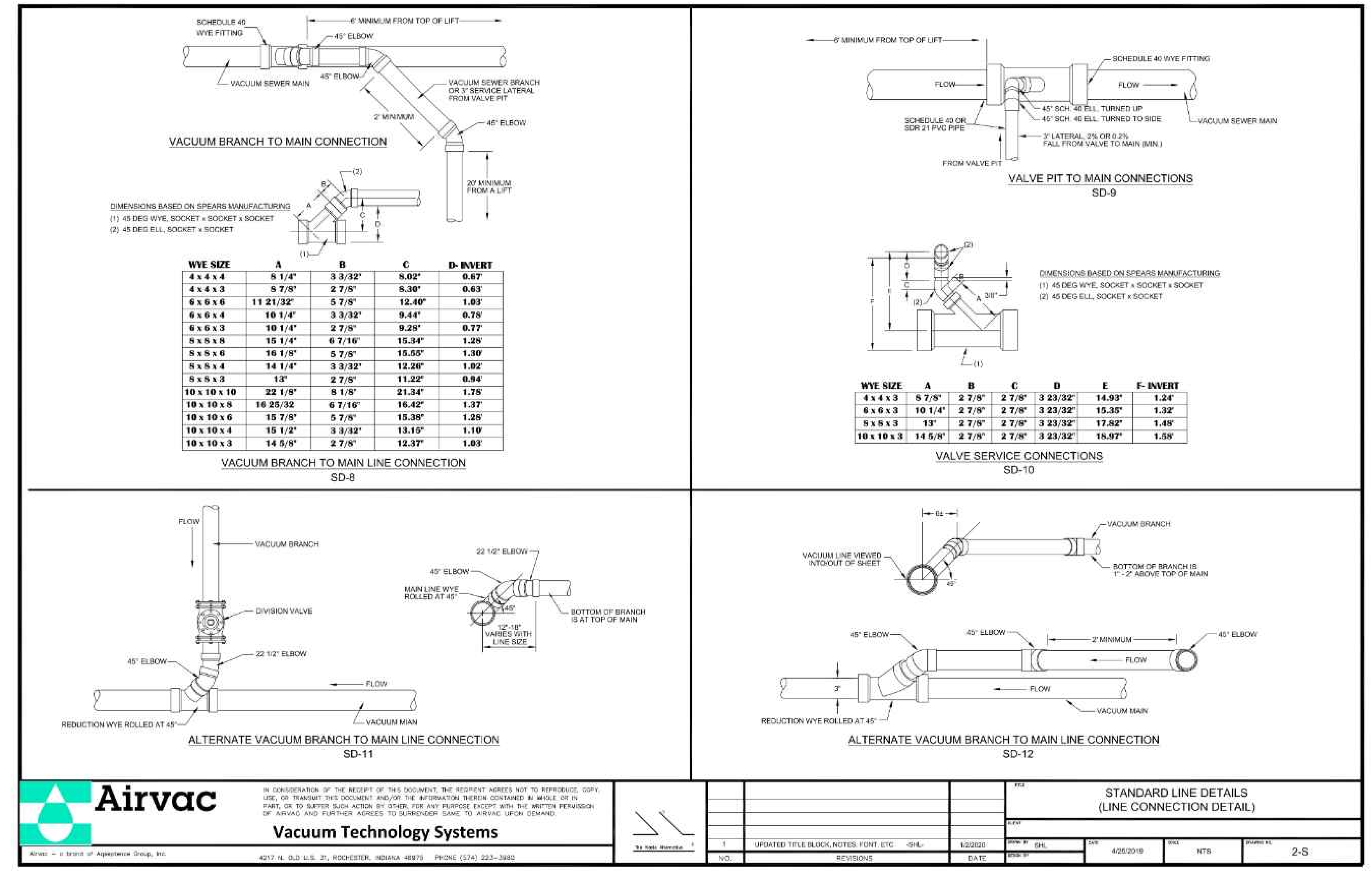
SHEET NUMBER
C24

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION_DETAILS.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/9/2022 2:00 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013



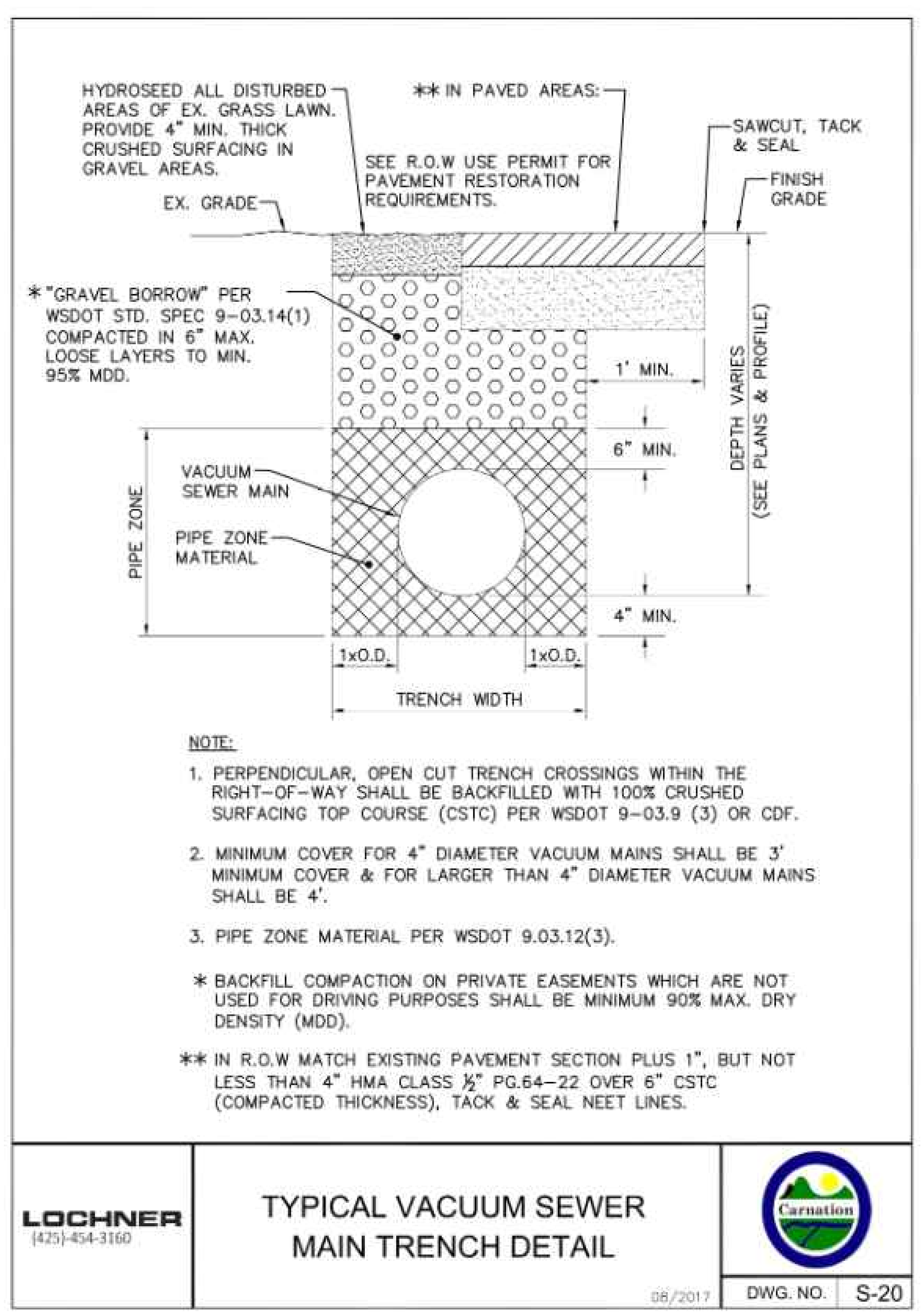
MODEL VP3042H
CONCRETE COLLAR FINAL DESIGN BY ENGINEER OF RECORD
CAST IRON FRAME AND LID RATED FOR H20 TRAFFIC LOADING
SPIRAL WOUND, HDD LOADING RATED, FIBERGLASS VALVE PIT
NOTE: IN-SUMP BREATHER NOT SHOWN IN THIS VIEW FOR CLARITY - SEE ADJACENT ELEVATION AND PLAN VIEWS
ANTI-BUOYANCY COLLAR
AIRVAC FLEXIBLE CONNECTOR
VACUUM SEWER MAIN (DIRECTION OF FLOW INTO PAPER)
ONE PIECE MOLDED SUMP ASSEMBLY
2" SENSOR LINE
3" SUCTION LINE
SECTION "A-A"
SECTION "B-B"
VALVE PIT SECTION "A" & "B"
INSTALLING PIPE THROUGH A GROMMET
NOTES:
1. ALL GROMMETS FOR VALVE PIT AND SUMP SUPPLIED BY AIRVAC.
2. ALL HOLES IN VALVE PIT AND PIT BOTTOM ARE FACTORY CUT. ALL GRAVITY LINE CONNECTION OPENINGS IN THE SUMP ARE FIELD CUT.
LIFT DETAILS FOR 3" SERVICE LATERAL
VALVE PIT BEDDING & BACKFILL DETAIL
Airvac
Vacuum Technology Systems
2 PIECE 6FT HYBRID PIT

2 PIECE - 6 FT HYBRID PIT (S / C13)
NOT TO SCALE



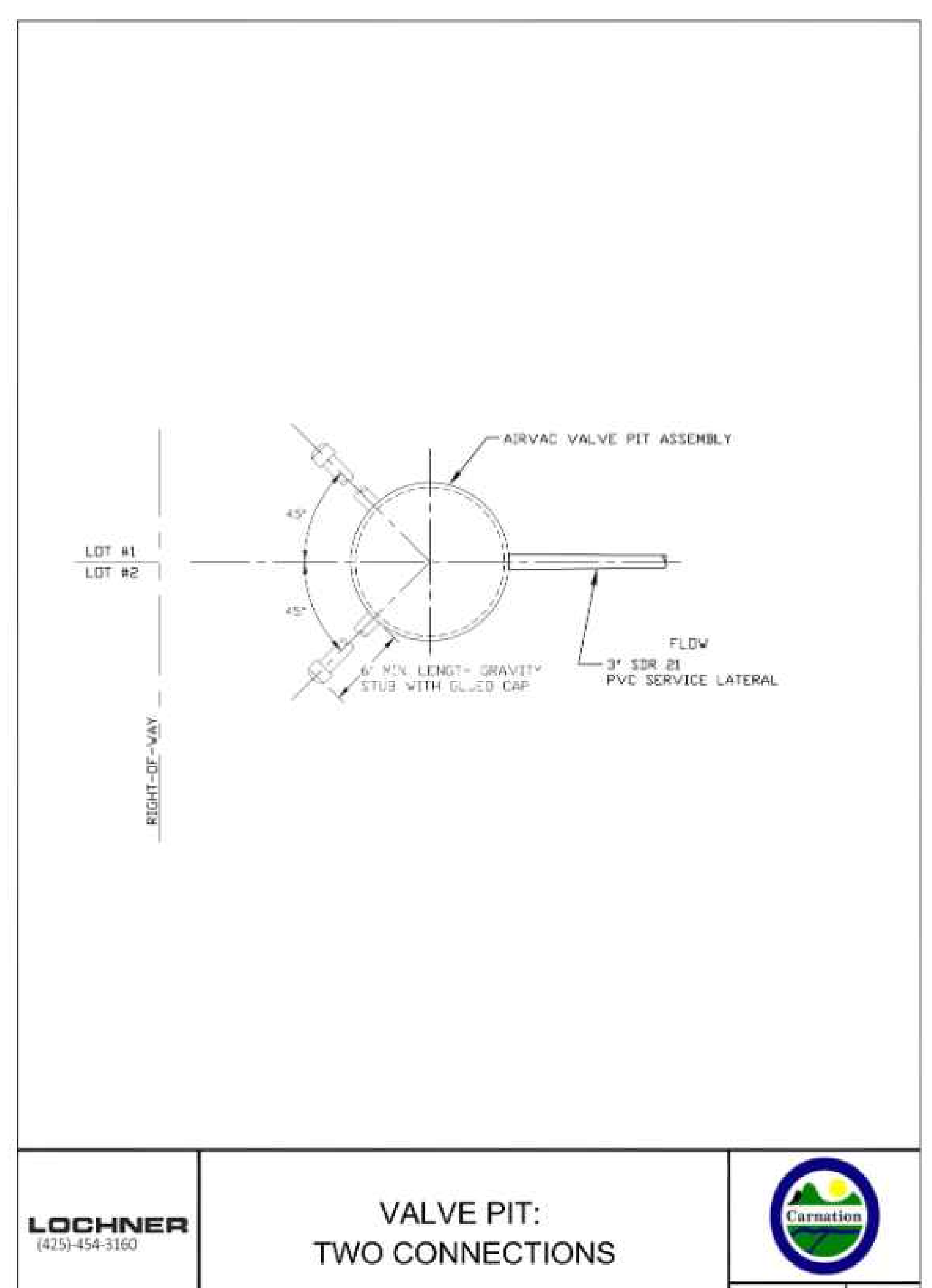
VACUUM BRANCH TO MAIN CONNECTION
VACUUM BRANCH TO MAIN LINE CONNECTION
SD-8
VALVE PIT TO MAIN CONNECTIONS
SD-9
VALVE SERVICE CONNECTIONS
SD-10
ALTERNATE VACUUM BRANCH TO MAIN LINE CONNECTION
SD-11
ALTERNATE VACUUM BRANCH TO MAIN LINE CONNECTION
SD-12
Airvac
Vacuum Technology Systems
STANDARD LINE DETAILS (LINE CONNECTION DETAIL)

STANDARD LINE DETAILS (LINE CONNECTION DETAIL) (T / C13)
NOT TO SCALE

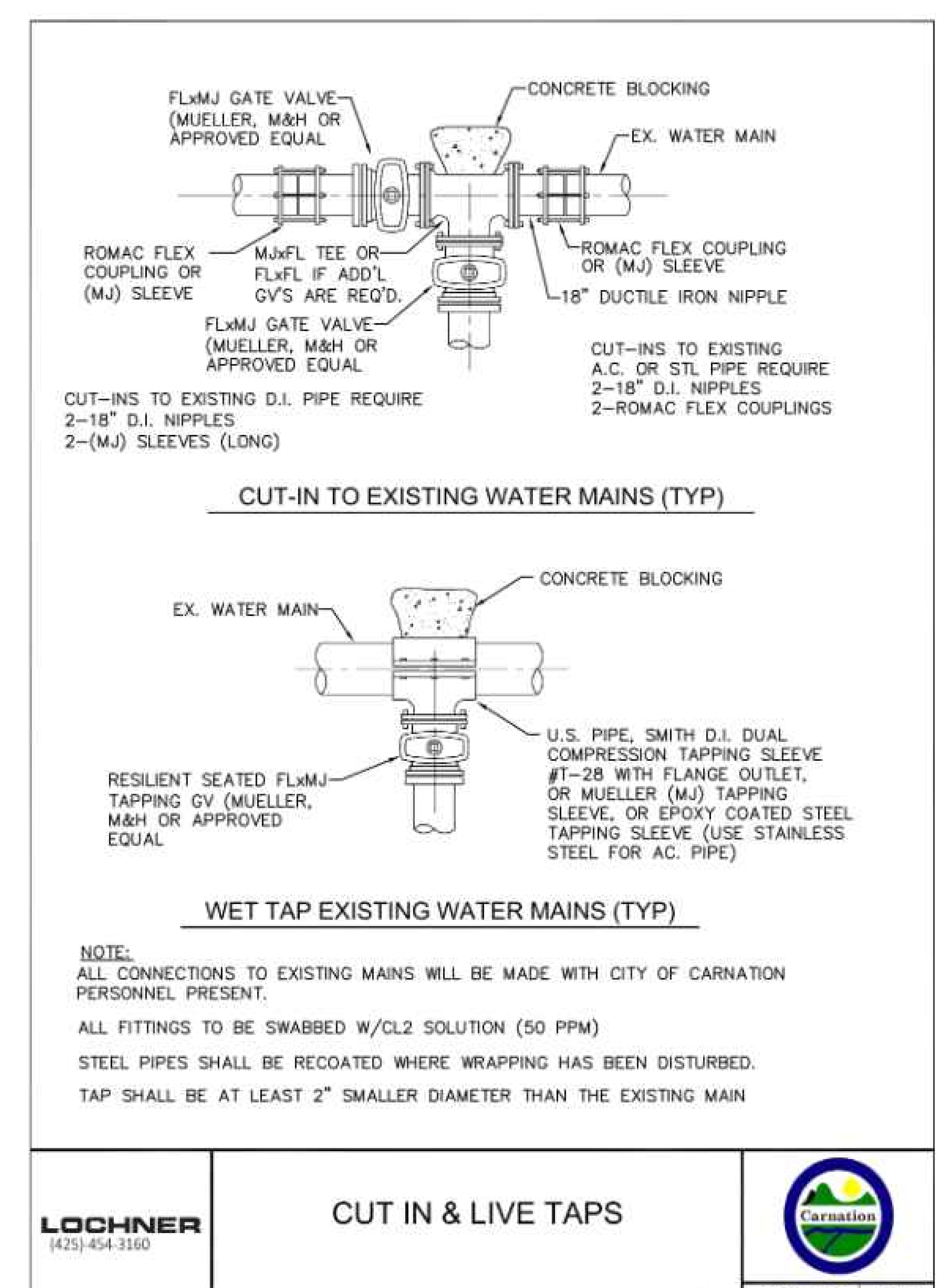


HYDROSEED ALL DISTURBED AREAS OF EX. GRASS LAWN. PROVIDE 4" MIN. THICK CRUSHED SURFACING IN GRAVEL AREAS.
** IN PAVED AREAS:
SEE R.O.W USE PERMIT FOR PAVEMENT RESTORATION REQUIREMENTS.
SAWCUT, TACK & SEAL
FINISH GRADE
EX. GRADE
*"GRAVEL BORROW" PER WSDOT STD. SPEC 9-03.14(1) COMPACTED IN 6" MAX. LOOSE LAYERS TO MIN. 95% MDD.
1' MIN.
6" MIN.
DEPTH VARIES (SEE PLANS & PROFILE)
VACUUM SEWER MAIN
PIPE ZONE MATERIAL
PIPE ZONE
4" MIN.
1xO.D.
TRENCH WIDTH
NOTE:
1. PERPENDICULAR, OPEN CUT TRENCH CROSSINGS WITHIN THE RIGHT-OF-WAY SHALL BE BACKFILLED WITH 100% CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT 9-03.9 (3) OR CDF.
2. MINIMUM COVER FOR 4" DIAMETER VACUUM MAINS SHALL BE 3' MINIMUM COVER & FOR LARGER THAN 4" DIAMETER VACUUM MAINS SHALL BE 4'.
3. PIPE ZONE MATERIAL PER WSDOT 9.03.12(3).
* BACKFILL COMPACTION ON PRIVATE EASEMENTS WHICH ARE NOT USED FOR DRIVING PURPOSES SHALL BE MINIMUM 90% MAX. DRY DENSITY (MDD).
** IN R.O.W MATCH EXISTING PAVEMENT SECTION PLUS 1", BUT NOT LESS THAN 4" HMA CLASS ½" PG.64-22 OVER 6" CSTC (COMPACTED THICKNESS), TACK & SEAL NEET LINES.
LOCHNER
(425)-454-3160
TYPICAL VACUUM SEWER MAIN TRENCH DETAIL
08/2017
DWG. NO. S-20

TYPICAL VACUUM SEWER MAIN TRENCH DETAIL (U / C13)
NOT TO SCALE

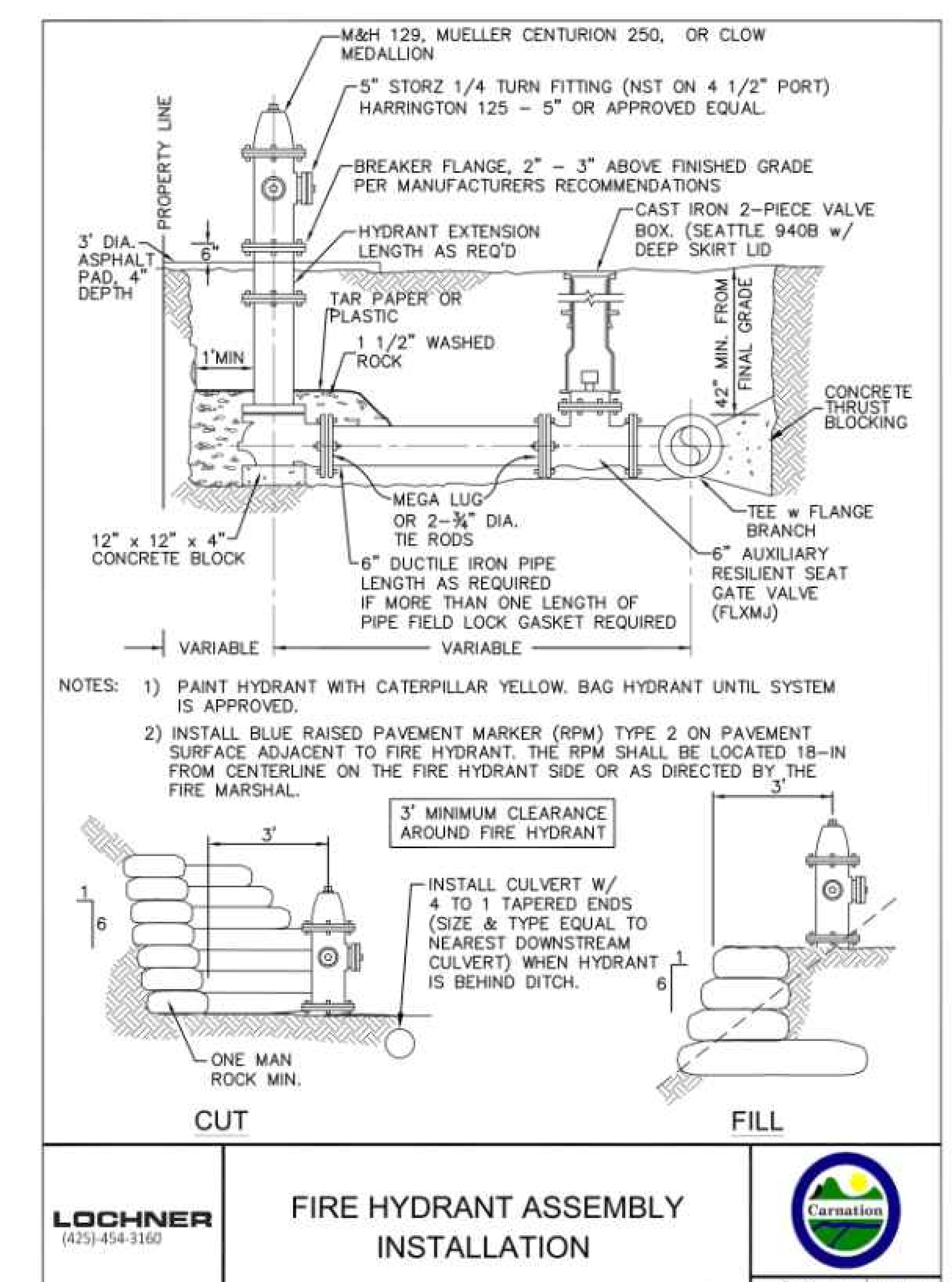


VALVE PIT CONNECTION (V / C13)
NOT TO SCALE



FLxMJ GATE VALVE (MUELLER, M&H OR APPROVED EQUAL
CONCRETE BLOCKING
EX. WATER MAIN
ROMAC FLEX COUPLING OR (MJ) SLEEVE
MJxFL TEE OR FLxFL IF ADD'L GV'S ARE REQ'D.
ROMAC FLEX COUPLING OR (MJ) SLEEVE
18" DUCTILE IRON NIPPLE
FLxMJ GATE VALVE (MUELLER, M&H OR APPROVED EQUAL
CUT-INS TO EXISTING D.I. PIPE REQUIRE 2-18" D.I. NIPPLES 2-(MJ) SLEEVES (LONG)
CUT-INS TO EXISTING A.C. OR STL PIPE REQUIRE 2-18" D.I. NIPPLES 2-ROMAC FLEX COUPLINGS
CUT-IN TO EXISTING WATER MAINS (TYP)
EX. WATER MAIN
CONCRETE BLOCKING
RESILIENT SEATED FLxMJ TAPPING GV (MUELLER, M&H OR APPROVED EQUAL
U.S. PIPE, SMITH D.I. DUAL COMPRESSION TAPPING SLEEVE #T-28 WITH FLANGE OUTLET, OR MUELLER (MJ) TAPPING SLEEVE, OR EPOXY COATED STEEL TAPPING SLEEVE (USE STAINLESS STEEL FOR AC. PIPE)
WET TAP EXISTING WATER MAINS (TYP)
NOTE:
ALL CONNECTIONS TO EXISTING MAINS WILL BE MADE WITH CITY OF CARNATION PERSONNEL PRESENT.
ALL FITTINGS TO BE SWABBED W/CL2 SOLUTION (50 PPM)
STEEL PIPES SHALL BE RECOATED WHERE WRAPPING HAS BEEN DISTURBED.
TAP SHALL BE AT LEAST 2" SMALLER DIAMETER THAN THE EXISTING MAIN
LOCHNER
(425)-454-3160
CUT IN & LIVE TAPS
08/2017
DWG. NO. W-1

CUT IN & LIVE TAPS (W / C14)
NOT TO SCALE



M&H 129, MUELLER CENTURION 250, OR CLOW MEDALLION
5" STORZ 1/4 TURN FITTING (NST ON 4 1/2" PORT) HARRINGTON 125 - 5" OR APPROVED EQUAL
BREAKER FLANGE, 2" - 3" ABOVE FINISHED GRADE PER MANUFACTURERS RECOMMENDATIONS
CAST IRON 2-PIECE VALVE BOX. (SEATTLE 940B w/ DEEP SKIRT LID
HYDRANT EXTENSION LENGTH AS REQ'D
PROPERTY LINE
3' DIA. ASPHALT PAD, 4" DEPTH
TAR PAPER OR PLASTIC
1 1/2" WASHED ROCK
1'MIN
42" MIN. FROM FINAL GRADE
CONCRETE THRUST BLOCKING
MEGA LUG OR 2-¾" DIA. TIE RODS
TEE w FLANGE BRANCH
12" x 12" x 4" CONCRETE BLOCK
6" DUCTILE IRON PIPE LENGTH AS REQUIRED IF MORE THAN ONE LENGTH OF PIPE FIELD LOCK GASKET REQUIRED
6" AUXILIARY RESILIENT SEAT GATE VALVE (FLXMJ)
VARIABLE
VARIABLE
NOTES: 1) PAINT HYDRANT WITH CATERPILLAR YELLOW. BAG HYDRANT UNTIL SYSTEM IS APPROVED.
2) INSTALL BLUE RAISED PAVEMENT MARKER (RPM) TYPE 2 ON PAVEMENT SURFACE ADJACENT TO FIRE HYDRANT. THE RPM SHALL BE LOCATED 18-IN FROM CENTERLINE ON THE FIRE HYDRANT SIDE OR AS DIRECTED BY THE FIRE MARSHAL.
3' MINIMUM CLEARANCE AROUND FIRE HYDRANT
INSTALL CULVERT W/ 4 TO 1 TAPERED ENDS (SIZE & TYPE EQUAL TO NEAREST DOWNSTREAM CULVERT) WHEN HYDRANT IS BEHIND DITCH.
ONE MAN ROCK MIN.
CUT
FILL
LOCHNER
(425)-454-3160
FIRE HYDRANT ASSEMBLY INSTALLATION
08/2017
DWG. NO. W-4

FIRE HYDRANT ASSEMBLY (X / C14)
NOT TO SCALE

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CARNATION, WA 98014
DETAILS

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DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 — SHEET 25 OF 27

SHEET NUMBER
C25

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION_DETAILS.DWG
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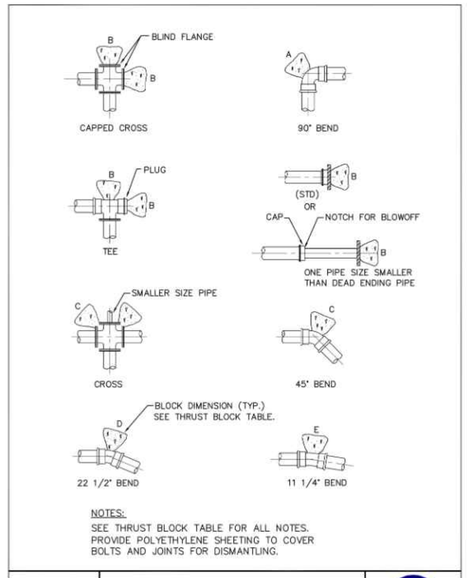


NOTES:
SEE THRUST BLOCK TABLE FOR ALL NOTES.
PROVIDE POLYETHYLENE SHEETING TO COVER BOLTS AND JOINTS FOR DISMANTLING.

LOCHNER (425)-454-3160 | CONCRETE BLOCKING DETAIL | 08/2017 | DWG. NO. W-12

CONCRETE BLOCKING DETAIL (Y / C14)
NOT TO SCALE

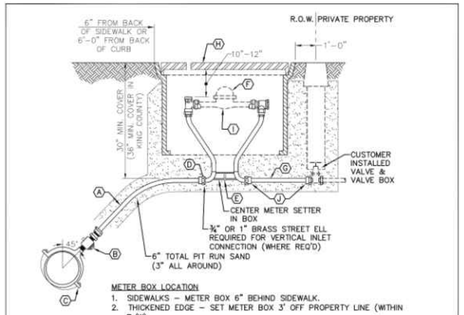
THRUST BLOCK – TABLE
MIN. BEARING AREA AGAINST UNDISTURBED SOIL
SQUARE FEET

PIPE SIZE	A (FT.^{2})	B (FT.^{2})	C (FT.^{2})	D (FT.^{2})	E (FT.^{2})
3"	3	2	2	2	2
6"	4	4	2	2	2
8"	7	6	4	2	2
10"	11	10	6	3	2
12"	16	14	9	5	3
14"	22	19	12	6	3
16"	29	25	16	8	4
18"	36	31	20	10	5
20"	45	39	24	13	6
22"	54	47	29	15	8
24"	64	56	35	18	9
28"	87	76	48	24	12
30"	101	87	55	28	14
36"	145	125	78	40	20
42"	197	171	107	55	27
48"	257	223	140	71	36

NOTES:
1. BEARING AREA OF CONC. THRUST BLOCK BASED ON 200 PSI PRESSURE AND SAFE SOIL BEARING LOAD OF 2,000 POUNDS PER SQUARE FOOT.
2. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES AND SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM BEARING SURFACE OF 6" X 6" SQUARE AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING OF JOINT.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATION PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. ALL BOLTS AND NUTS SHALL BE POLYWRAPPED PRIOR TO POURING CONCRETE.

LOCHNER (425)-454-3160 | THRUST BLOCK TABLE | 08/2017 | DWG. NO. W-13

THRUST BLOCK TABLE (Z / C14)
NOT TO SCALE



METER BOX LOCATION
1. SIDEWALKS – METER BOX 6" BEHIND SIDEWALK.
2. THICKENED EDGE – SET METER BOX 3' OFF PROPERTY LINE (WITHIN R/W).
3. SHOULDER ROADS – SET METER ON BACKSIDE OF DITCH (WITHIN R/W)
4. SPECIAL CIRCUMSTANCES – CONSULT CITY ENGINEER NO BOXES IN DRIVEWAYS OR TRAVELED WAYS UNLESS APPROVED BY CITY ENGINEER.
5. CURB NO SIDEWALK – 6' BEHIND BACK OF CURB (WITHIN R/W).
6. SET METER PERPENDICULAR TO PAVING.

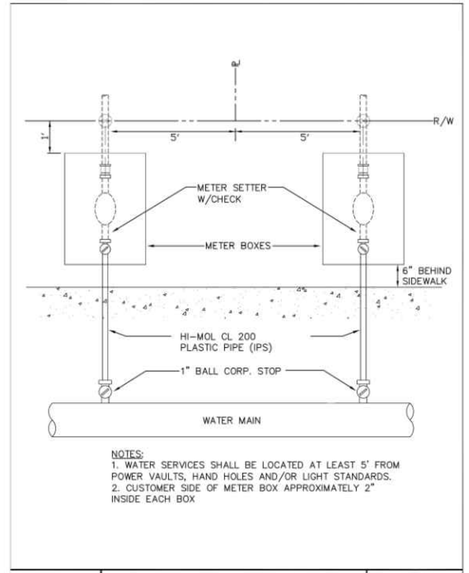
NOTE: SERVICE LOCATION SHALL BE DETERMINED SIMULTANEOUSLY W/ OTHER UTILITIES SO THAT CONFLICTS ARE NOT ENCOUNTERED.

KEYED NOTES
A 1" HI-MOL PLASTIC PIPE CL200 (IPS) w/ 16 GAUGE TRACER WIRE & STAINLESS STEEL INSERTS TO REINFORCE PLASTIC PIPE ENDS.
B 1" BALL CORP. STOP (IPxCOMP)
C 1" SERVICE SADDLE WITH DOUBLE STAINLESS STEEL STRAPS EQUAL TO ROMAC.
D 1"x ¾" REDUCER (COMPxMIP) REQ'D. FOR ¾" METER SETTERS OR 1" (COMPxMIP) ADAPTOR FOR 1" METER SETTERS.
E ¾" OR 1"x 12" FORD METER SETTER EQUIPED w/ LOCK WING ANGLE STOP, ANGLE BALL CHECK & MULTI PURPOSE FITTINGS.
F METER TO BE INSTALLED BY CONTRACTOR.
G ¾" OR 1" DIA. (LENGTH AS REQ'D) HI-MOL PLASTIC PIPE, CL 200 w/ TEMPORARY PLUG.
H MID-STATES HDPE METER BOX #BCF132412B, DI METER LID w/ TOUCH READ BCF1118AMR/TR OR BCF1324AMR/TR.
I TEMPORARY PVC SPACER OF CORRECT LENGTH FOR SETTER.
J ¾" OR 1" ADAPTOR (MIPxCOMP)

NOTE: BRASS FITTINGS SHALL BE MUELLER, FORD OR APPROVED EQUAL.

LOCHNER (425)-454-3160 | 5/8" OR 1" SINGLE METER SERVICE | 08/2017 | DWG. NO. W-15

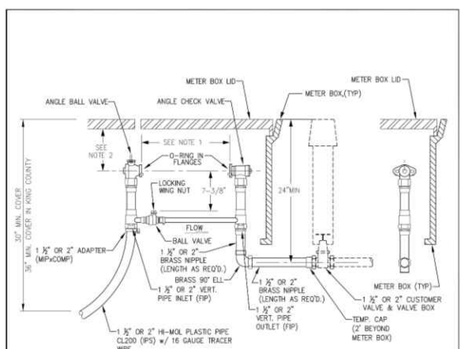
5/8" OR 1" SINGLE METER SERVICE (Z1 / C14)
NOT TO SCALE



NOTES:
1. WATER SERVICES SHALL BE LOCATED AT LEAST 5' FROM POWER VAULTS, HAND HOLES AND/OR LIGHT STANDARDS.
2. CUSTOMER SIDE OF METER BOX APPROXIMATELY 2" INSIDE EACH BOX

LOCHNER (425)-454-3160 | PAIRED WATER SERVICE LOCATION DIAGRAM | 08/2017 | DWG. NO. W-18

PAIRED WATER SERVICE LOCATION DIAGRAM (Z2 / C14)
NOT TO SCALE



NOTE 1:
TEMPORARY PVC SPACER FOR 1-1/2" DISC. METER = 13-1/4"
2" DISC. METER = 17-1/4"

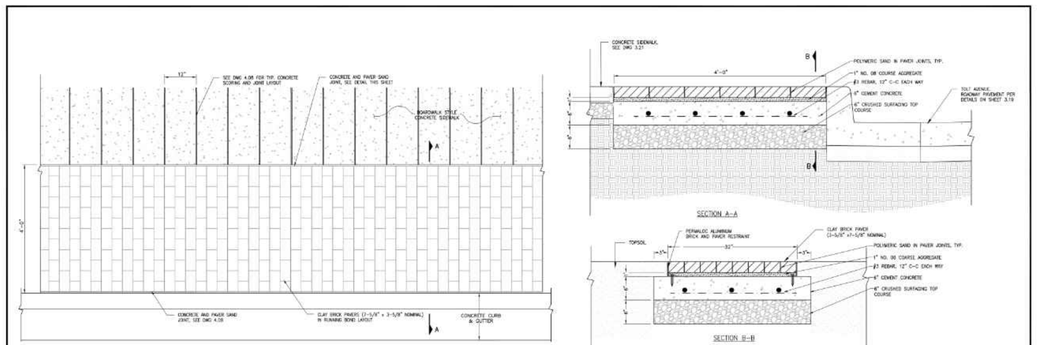
NOTE 2:
CLEARANCE FROM BOTTOM OF METER BOX LID TO CENTER OF ANGLE BALL VALVE.
1-1/2" DISC. METER = 8"-10"
2" DISC. METER = 8"-10"

NOTE 3:
BRASS FITTINGS SHALL BE FORD, MUELLER OR APPROVED EQUAL.

GENERAL NOTES:
1. FORD 80 SERIES COPPERSETTER 1 ½" x 12" #VBH86-12B-11-66
   2" x 12" #VBH87-12B-11-77.
2. METERS TO BE SUPPLIED AND SET BY THE DISTRICT.
4. METER SETTER TO BE APPROVED BY THE DISTRICT PRIOR TO BACKFILL.
5. METER BOX: MID-STATES PLASTIC, INC. HDPE METER BOX NO. BCF173012B D.I. METER LID w/READER NO. BCF173ORL.
6. IF IN PAVING, DRIVEWAY, SHOULDER OR SIDEWALK A TRAFFIC BOX IS REQUIRED NO. 2 FOOTITE CONCRETE METER BOX w/ STEEL LID & HINGED READER WINDOW.
7. WATER SERVICE PIPING SHALL BE BURIED IN 6" OF COURSE SAND (3" ALL AROUND).

LOCHNER (425)-454-3160 | 1-1/2" & 2" METER SETTERS | 08/2017 | DWG. NO. W-20

1 1/2" IRRIGATION METER DETAIL (Z3 / C14)
NOT TO SCALE



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DESIGNER	DRAWN BY	CHECKED BY
EK/DH/CC/RS	AK/KC	MDC/DS/CL

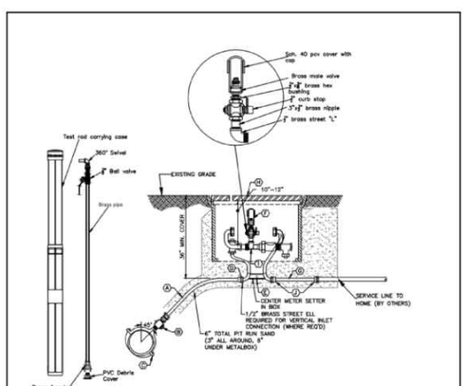
NO.	REVISION COMMENTS	BY	REVIEW	DATE

CITY OF CARNATION
PUBLIC WORKS DEPARTMENT

TOLT AVENUE (SR203)
CENTRAL BUSINESS DISTRICT (CBD) IMPROVEMENTS
Otak 11241 Willows Road NE, Suite 200 Redmond, WA 98052 425.822.4446 www.otak.com

CLAY BRICK PAVER DETAILS | Drawing No. 4.09 | Sheet No. 51 of 129

CLAY BRICK PAVER DETAIL (Z4 / C09)
NOT TO SCALE



PORTABLE TESTING ROD

METER BOX SAMPLING STATION

KEYED NOTES
A 1" HI-MOL PLASTIC PIPE CL200 (IPS) w/ 16 GAUGE TRACER WIRE & STAINLESS STEEL INSERTS TO REINFORCE PLASTIC PIPE ENDS.
B 1" BALL CORP. STOP (IPxCOMP)
C 1" SERVICE SADDLE WITH DOUBLE STAINLESS STEEL STRAPS EQUAL TO ROMAC.
D 1"x ¾" REDUCER (COMPxMIP)
E 1 ½" OR 1"x 12" FORD METER SETTER EQUIPED w/ LOCK WING ANGLE STOP, ANGLE BALL CHECK & MULTI PURPOSE FITTINGS.
F SAMPLING STATION
G ¾" DIA. (LENGTH AS REQ'D) HI-MOL PLASTIC PIPE, CL 200 w/ TEMPORARY PLUG.
H MID-STATES HDPE METER BOX #BCF132412B, DI METER LID w/ TOUCH READ BCF1118AMR/TR OR BCF1324AMR/TR.
I TEMPORARY PVC SPACER OF CORRECT LENGTH FOR SETTER.
J ¾" OR 1" ADAPTOR (MIPxCOMP)

NOTES:
1. BRASS FITTINGS SHALL BE MUELLER, FORD OR APPROVED EQUAL.
2. SAMPLING FIXTURE SHALL BE KUPFERLE FOUNDARY CO. #9494 OR APPROVED EQUAL WATER MAIN AND SERVICE TAP.
3. PROVIDE ONE PORTABLE TESTING ROD PER PROJECT TO CITY OF CARNATION.

LOCHNER (425)-454-3160 | WATER SAMPLING STATION | 08/2017 | DWG. NO. W-34

WATER SAMPLING STATION (Z5 / C14)
NOT TO SCALE

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TIMOTHY W. GABELEIN — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Tim Gabelein
Date: 2022.10.05 13:15:15 -07'00'

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SHEET	26 OF 27

SHEET NUMBER
C26

G:\3D FILE NUMBER P\CLIENTS\CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\RAW\TOLT VILLAS, CARNATION_DETAILS.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/6/2022 2:00 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00" X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

SW 1/4, SE 1/4, SEC 16, T25N, R7E, WM

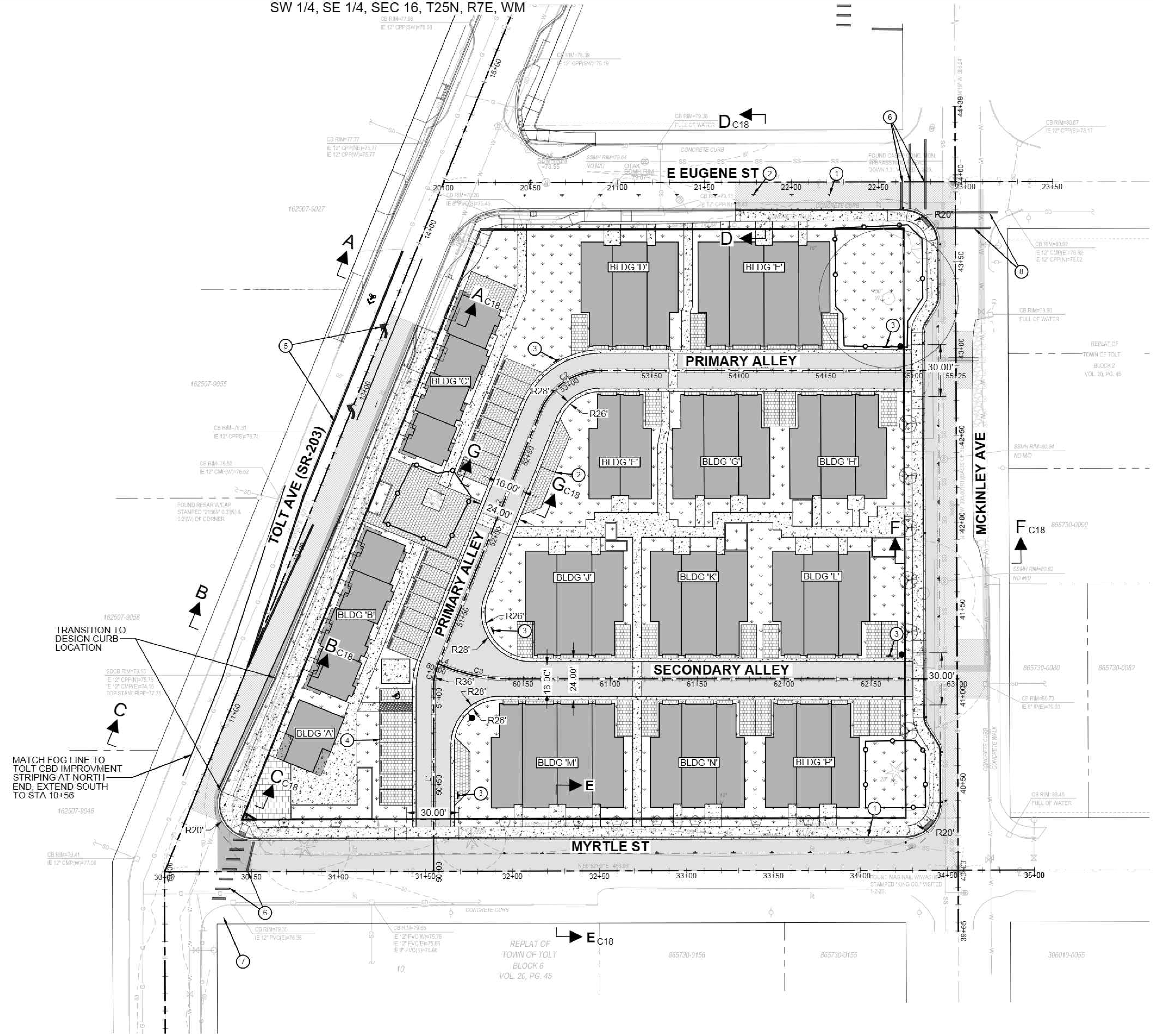
30 15 0 30 60
SCALE IN FEET

KEY NOTES

KEY	DESCRIPTION	DETAIL/ SHEET
1	PARALLEL PARKING MARKERS, SPACE 30' FROM PC OF CURB RETURN (TYP)	-
2	MARK PARALLEL PARKING SPACES AT 22' O.C. (TYP)	-
3	NO PARKING - FIRE LANE 18"x12" W/ BLOCK LETTERING 3" HIGH ON 2" GALV. STEEL POST SIGN BETWEEN 4' AND 6' FROM GRADE	-
4	9'x19' PARKING SPACE (TYP)	-
5	STRIPING IN TOLT AVE SHOWN AS DEPICTED IN TOLT AVENUE CENTRAL BUSINESS DISTRICT PLANS PROVIDED BY OTAK ENGINEEERING. CONFIRM LOCATION AND ALIGNMENT WITH "TOLT AVENUE (SR203) CENTRAL BUSINESS DISTRICT (CBD) IMPROVEMENTS" DRAWING 9.01 - SIGNING AND STRIPING PLAN	-
6	REPLACE STRIPING IN KIND	-
7	EXISTING WSDOT TYPE F-40.12-03 ADA CURB RAMP	-

GENERAL NOTES:

1. FOR DETAILED STREET SECTIONS SEE SHEET C18 & C19.
2. ALL CITY SIGNAGE ON PROJECT FRONTAGE TO BE REPLACED IN KIND. SALVAGE SIGNAGE TO BE REUSED, REPLACE ANY DAMAGED SIGNS AT OWNER'S EXPENSE



LEGEND:

- ASPHALT PAVEMENT (FULL DEPTH SECTION)
- GRIND AND OVERLAY
- CONCRETE PAVEMENT
- CONCRETE WALK / PAD
- GRID / BLOCK PAVERS (ECO-PRIORA)
- BUILDING / ROOF AREAS
- LANDSCAPE / PLANTER AREAS
- PROPOSED EDGE TRAVEL LANE

No.	DATE	BY	REVISION
1	4/1/2021	TG	REVISE STORMFILTER MH CONFIGURATION
2	7/7/2022	TG	REVISED PER CITY REVIEW COMMENTS
3	9/30/2022	TG	REVISED PER CITY REVIEW COMMENTS

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P.O. Box 1132
Freeland, WA 98249
P: 360.331.4131
F: 360.331.5131
www.dcgengr.com
DCG civil structural

CALL 811
2 BUSINESS DAYS BEFORE YOU DIG
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

TIMOTHY W. GABELEIN — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — Digitally signed Tim Gabelein Date: 2022.10...

BASE MAP/TOPOGRAPHY PROVIDED BY OTHERS. DCG CANNOT BE HELD LIABLE FOR ACCURACY. CONTRACTOR SHALL FIELD VERIFY GRADES, UTILITIES, & ALL OTHER EX FEATURES & CONDITIONS. IF CONDITIONS ARE NOT AS SHOWN &/OR PLANS CANNOT BE CONSTRUCTED AS SHOWN, CONTACT DCG PRIOR TO CONSTRUCTION.

OWNER: TOLT VILLAS, LLC
SHANE FORTNEY, PO BOX 522
WOODINVILLE, WA 98072

PROJECT: TOLT VILLAS
CARNATION, WA 98014
SIGNING AND PAVEMENT MARKING PLAN

PROJ. MANAGER:	NA
DESIGNED BY:	CS
DRAWN BY:	GR
CHECKED BY:	TG
SCALE:	SEE SCALE BAR
DATE: 9/30/2022	REV. 3 — SHEET 27 OF 27

SHEET NUMBER
C27

CAD FILE NUMBER: P:\CLIENTS-CIVIL\HYBRID ARCHITECTS\CARNATION DEVELOPMENT\DWG\DRAWING\TOLT VILLAS_CARNATION.DWG
LAST MODIFIED BY: NICK - SAVE DATE: 9/30/2022 1:41 PM - SHEET SET: XXXX - ORIGINAL SHEET SIZE: ANSI FULL BLEED D (34.00 X 22.00 INCHES)
AUTOCAD VERSION: CIVIL 3D 2013

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	Acer circinatum / Vine Maple
	Acer palmatum 'Bloodgood' / Bloodgood Japanese Maple
	Fagus sylvatica 'Dawyck Purple' / Dawyck Purple Beech
	Liquidambar styraciflua 'Clydesform' TM / Emerald Sentinel '
	Parrotia persica 'Ruby Vase' / Ruby Vase Persian Parrotia
	Stewartia pseudocamellia / Japanese Stewartia

E SHRUBS	BOTANICAL / COMMON NAME
	Gaultheria shallon / Salal
	Mahonia repens / Creeping Oregon Grape
	Rhododendron macrophyllum / Pacific Rhododendron
	Ribes sanguineum / Red Flowering Currant
	Symphoricarpos albus / Compact Snowberry
	Vaccinium ovatum / Evergreen Huckleberry

SHRUBS	BOTANICAL / COMMON NAME
	Berberis thunbergii 'Crimson Pygmy' / Crimson Pygmy Barberry
	Cornus sericea 'Kelseyi' / Kelseyi Dogwood
	Euonymus japonicus 'Microphyllus' / Tom Thumb Boxleaf Eunonymus
	Ilex crenata 'Sky Pencil' / Sky Pencil Japanese Holly
	Lonicera pileata 'Moss Green' / Moss Green Honeysuckle
	Nandina domestica 'Gulf Stream' TM / Heavenly Bamboo
	Physocarpus opulifolius 'Coppertina' / Coppertina Ninebark
	Pieris japonica 'Cavatine' / Lily of the Valley Bush
	Spiraea japonica 'Yan' TM / Double Play Gold Spirea

NATIVE PERENNIALS	BOTANICAL / COMMON NAME
	Blechnum spicant / Deer Fern
	Dicentra formosa / Pacific Bleeding-Heart
	Polystichum munitum / Western Sword Fern

PERENNIALS	BOTANICAL / COMMON NAME
	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass
	Calluna vulgaris 'Firefly' / Heather
	Carex oshimensis 'Evergold' / Variegated Japanese Sedge
	Carex oshimensis 'Everillo' / Everillo Japanese Sedge
	Carex testacea / Orange Sedge
	Hemerocallis x 'Stella de Oro' / Stella de Oro Daylily
	Pennisetum alopecuroides 'Hamein' / Hamein Dwarf Fountain Grass
	Pennisetum orientale / Oriental Fountain Grass
	Rudbeckia fulgida sullivantii 'Little Goldstar' / Little Goldstar Coneflower

VINES	BOTANICAL / COMMON NAME
	Campsis radicans 'Indian Summer' / Trumpet Creeper
	Clematis armandii 'Snowdrift' / Evergreen Clematis

PLANT SCHEDULE

GROUND COVERS	BOTANICAL / COMMON NAME
	Arctostaphylos uva-ursi / Kinnikinnick
	Assorted Seasonal Annuals
	Fragaria chiloensis / Beach Strawberry
	Turf Sod / Drought Tolerant Fescue Blend

SITE	BOTANICAL / COMMON NAME
	5/8 (~) Crushed Rock
	1/8" Drain Rock
	Arborist Chips 6" Depth

RENDERED
LANDSCAPE PLAN

Root of Design
206.491.9545
PO BOX #252
Stanwood, WA 98292

Root of Design

State of Washington registered Landscape Architect

Devin Peterson

Devin Peterson certificate no. 1222

PROJECT TITLE

RENDERED LANDSCAPE PLAN

TOLT VILLAS CARNATION, WA

DRAWN	DATE
KL	06.15.20

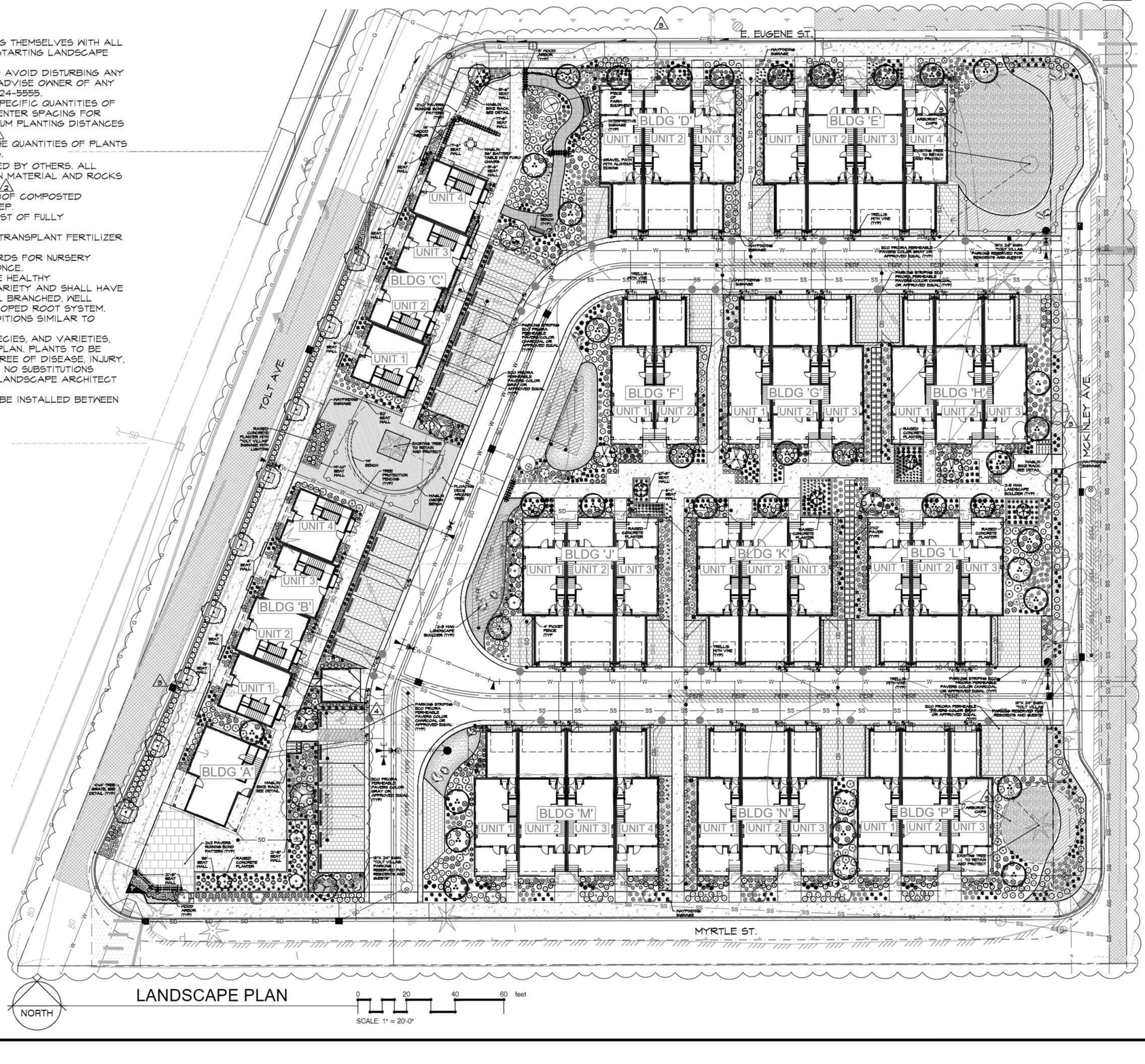
REVISED	DATE
KL	05.04.21 1
KL	10.18.21 2
KL	07.07.22 3
KL	09.29.22 4

1" = 20'-0"

L0

LANDSCAPE NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL OTHER SITE IMPROVEMENTS AND CONDITIONS PRIOR TO STARTING LANDSCAPE WORK.
2. CONTRACTOR SHALL USE CAUTION WHILE EXCAVATING TO AVOID DISTURBING ANY UTILITIES ENCOUNTERED. CONTRACTOR IS TO PROMPTLY ADVISE OWNER OF ANY DISTURBED UTILITIES. LOCATION SERVICE PHONE 1-800-424-5555.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPUTING SPECIFIC QUANTITIES OF GROUND COVERS AND PLANT MATERIALS UTILIZING ON-CENTER SPACING FOR PLANTS AS STATED ON THE LANDSCAPE PLAN AND MINIMUM PLANTING DISTANCES AS SPECIFIED BELOW IN THESE NOTES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE QUANTITIES OF PLANTS THAT ARE REPRESENTED BY SYMBOLS ON THE DRAWINGS.
5. SUBGRADE IS TO BE WITHIN ½" OF ONE FOOT AS PROVIDED BY OTHERS. ALL PLANTING AREAS TO BE CLEARED OF ALL CONSTRUCTION MATERIAL AND ROCKS AND STICKS LARGER THAN 2" DIAMETER.
6. EXISTING SOILS SHALL BE AUGMENTED WITH A 3" LAYER OF COMPOSTED ORGANIC MATERIAL TILLED A MINIMUM OF SIX INCHES DEEP.
7. 2" DEPTH MULCH IN ALL BED AREAS. MULCH SHALL CONSIST OF FULLY COMPOSTED MATERIALS.
8. ALL PLANT MATERIAL SHALL BE FERTILIZED WITH AGRO TRANSPLANT FERTILIZER 4-2-2 PER MANUFACTURER'S SPECIFICATIONS.
9. ALL PLANT MATERIAL SHALL CONFORM TO AAN STANDARDS FOR NURSERY STOCK, LATEST EDITION. ANY REPLACEMENTS MADE AT ONCE.
   - 9.A. GENERAL: ALL PLANT MATERIAL FURNISHED SHALL BE HEALTHY REPRESENTATIVES, TYPICAL OF THEIR SPECIES OF VARIETY AND SHALL HAVE A NORMAL GROWTH HABIT. THEY SHALL BE FULL, WELL BRANCHED, WELL PROPORTIONED, AND HAVE A VIGOROUS, WELL DEVELOPED ROOT SYSTEM. ALL PLANTS SHALL BE HARDY UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT.
   - 9.B. TREES, SHRUBS, AND GROUND COVER: QUANTITIES, SPECIES, AND VARIETIES, SIZES AND CONDITIONS AS SHOWN ON THE PLANTING PLAN. PLANTS TO BE HEALTHY, VIGOROUS, WELL FOLIATED WHEN IN LEAF, FREE OF DISEASE, INJURY, INSECTS, DECAY, HARMFUL DEFECTS, AND ALL WEEDS. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM LANDSCAPE ARCHITECT OR OWNER.
10. ALUMINUM EDGING, PERMALOC OR APPROVED EQUAL, TO BE INSTALLED BETWEEN BARK AND COBBLE.
11. AUTOMATIC IRRIGATION SYSTEM REQUIRED.



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PO Box #292
Stanwood, WA 98292

Root of Design

State of Washington registered Landscape Architect

Devin Peterson

Devin Peterson certificate no. 1222

PROJECT TITLE

LANDSCAPE PLAN

TOLT VILLAS CARNATION, WA

DRAWN	DATE 06.15.20
REVISED	DATE 05.04.21 (2)
	10.18.21 (3)
	07.07.22 (3)
	09.29.22 (4)

1" = 20'-0"

L1

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	QTY
	Acer circinatum Vine Maple	3 Stem Min. 6' Ht. 2" Cal.	Yes	Yes	37
	Acer palmatum 'Bloodgood' Bloodgood Japanese Maple	2" Cal	No	No	4
	Fagus sylvatica 'Dawyck Purple' Dawyck Purple Beech Street Tree and On Site Tree	2"-2.5" Cal, 8' Min. Ht.	No	No	15
	Liquidambar styraciflua 'Clydesform' TM Emerald Sentinel Sweet Gum Street Tree	2"-2.5" Cal, 8' Min. Ht.	No	No	9
	Parrotia persica 'Ruby Vase' Ruby Vase Persian Parrotia Street Tree and On Site Tree	2"-2.5" Cal, 8' Min. Ht.	No	No	11
	Stewartia pseudocamellia Japanese Stewartia Street Tree and On Site Tree	2"-2.5" Cal, 8' Min. Ht.	No	No	5

GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	MATURE HT., SPREAD	SPACING	QTY
	Arctostaphylos uva-ursi Kinnikinnick	1 gal	Yes	Yes	6-12" HT. 3-6' SPR.	24" o.c.	800 sf 211
	Assorted Seasonal Annuals	4"pot	No	No	4-6" HT. 2-3' SPR.	6" o.c.	34 sf 8 FLATS
	Fragaria chiloensis Beach Stranberry	1 gal.	Yes	Yes	4-6" HT. 2-3' SPR.	24" o.c.	5,115 sf 1,341
	Turf Sod Drought Tolerant Fescue Blend	sod	Yes	No	N/A		1,540 sf

SITE	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	MATURE HT., SPREAD	SPACING	QTY
	5/8 (-) Crushed Rock	N/A	N/A	N/A	N/A		539 sf
	7/8" Drain Rock	N/A	N/A	N/A	N/A		259 sf
	Arborist Chips 6" Depth	N/A					2,740 sf

PLANT SCHEDULE

SHRUBS	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	MATURE HT., SPREAD	SPACING	QTY
	Berberis thunbergii 'Crimson Pygmy' / Crimson Pygmy Barberry	2 gal, 16" Ht. Min.	Yes	No	2' HT. 3' SPR.	30" o.c.	22
	Cornus sericea 'Kelseyi' / Kelseyi Dogwood	2 gal, 16" Ht. Min.	Yes	No	24-30" HT. 24-30" SPR.	18" o.c.	40
	Evonymus japonicus 'Microphyllus' / Tom Thumb Boxleaf Eunonymus	2 gal, 16" Ht. Min.	Yes	No	18" HT. 16" SPR.	18" o.c.	3
	Ilex crenata 'Sky Pencil' / Sky Pencil Japanese Holly	2 gal, 16" Ht. Min.	Yes	No	8-10' HT. 2' SPR.	21" o.c.	41
	Lonicera pileata 'Moss Green' / Moss Green Honeysuckle	2 gal, 16" Ht. Min.	Yes	No	1-2' HT. 5-8' SPR.	24" o.c.	90
	Nandina domestica 'Gulf Stream' TM / Heavenly Bamboo	2 gal, 16" Ht. Min.	Yes	No	36" HT. 36" SPR.	24" o.c.	57
	Physocarpus opulifolius 'Coppertina' / Coppertina Ninebark	2 gal, 16" Ht. Min.	Yes	No	6-8' HT. 6-8' SPR.	48" o.c.	8
	Pieris japonica 'Cavatine' / Lily of the Valley Bush	2 gal, 16" Ht. Min.	Yes	No	2' HT. 3' SPR.	30" o.c.	38
A	Spiraea japonica 'Yan' TM / Double Play Gold Spirea	2 gal, 16" Ht. Min.	Yes	No	2' HT. 3' SPR.	21" o.c.	9

NATIVE SHRUBS	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	MATURE HT., SPREAD	SPACING	QTY
	Gaultheria shallon / Salal	2 gal, 16" Ht. Min.	Yes	Yes	4-10' HT. 4-10' SPR.	18" o.c.	529
	Mahonia repens / Creeping Oregon Grape	2 gal, 16" Ht. Min.	Yes	Yes	18" HT. 12-36" SPR.	27" o.c.	343
	Rhododendron macrophyllum / Pacific Rhododendron	2 gal, 16" Ht. Min.	Yes	Yes	8-10' HT. 4-5' SPR.	36" o.c.	5
	Ribes sanguineum / Red Flowering Currant	2 gal, 16" Ht. Min.	Yes	Yes	3'-10' HT. 3-5' SPR.	36" o.c.	126
	Symphoricarpos albus / Compact Snowberry	2 gal, 16" Ht. Min.	Yes	Yes	5' HT. 6' SPR.	30" o.c.	75
	Vaccinium ovatum / Evergreen Huckleberry	2 gal, 16" Ht. Min.	Yes	Yes	4-10' HT. 4-10' SPR.	24" o.c.	419

NATIVE PERENNIALS	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	MATURE HT., SPREAD	SPACING	QTY
	Blechnum spicant / Deer Fern	1 gal	Yes	Yes	8-20" HT. 2' SPR	12" o.c.	256
	Dicentra formosa / Pacific Bleeding-Heart	1 gal	Yes	Yes	2' HT. 2' SPR.	18" o.c.	59
	Polystichum munitum / Western Sword Fern	1 gal	Yes	Yes	36" HT. 36" SPR.	18" o.c.	702

PERENNIALS	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	MATURE HT., SPREAD	SPACING	QTY
	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	1 gal	Yes	No	6' HT. 2' SPR.	18" o.c.	15
	Calluna vulgaris 'Firefly' / Heather	1 gal	Yes	No	1.5' HT. 4' SPR.	18" o.c.	10
	Carex oshimensis 'Evergold' / Variegated Japanese Sedge	1 gal	Yes	No	18" HT. 16" SPR.	18" o.c.	130
	Carex oshimensis 'Everillo' / Everillo Japanese Sedge	1 gal	Yes	No	18-24" HT. 18-24" SPR.	15" o.c.	29
	Carex testacea / Orange Sedge	1 gal	Yes	No	18-24" HT. 18-24" SPR.	18" o.c.	166
	Hemerocallis x 'Stella de Oro' / Stella de Oro Daylily	1 gal	Yes	No	2' HT. 2' SPR.	18" o.c.	14
	Pennisetum alopecuroides 'Hameln' / Hameln Dwarf Fountain Grass	1 gal	Yes	No	2-3' HT. 2' SPR.	24" o.c.	54
	Pennisetum orientale / Oriental Fountain Grass	1 gal	Yes	No	36" HT. 36" SPR.	24" o.c.	62
	Rudbeckia fulgida sullivantii 'Little Goldstar' / Little Goldstar Coneflower	1 gal	Yes	No	16" HT. 16" SPR.	21" o.c.	10

VINES	BOTANICAL / COMMON NAME	SIZE	DROUGHT TOLERANT	NATIVE	MATURE HT., SPREAD	SPACING	QTY
	Campsis radicans 'Indian Summer' / Trumpet Creeper	1 gal	Yes	No	8-10' HT. 4-5' SPR.	48" o.c.	4
	Clematis armandii 'Snowdrift' / Evergreen Clematis	1 gal	Yes	No	40' HT. 30' SPR	36" o.c.	51

PLANTING CALCULATIONS

50% OF TREES TO BE NATIVE-DOES NOT INCLUDE STREET TREES		
TOTAL ON SITE TREES	REQUIRED NATIVE	TOTAL NATIVE
57	29	37

75% OF GROUND COVER TO BE NATIVE		
TOTAL GROUND COVER	REQUIRED NATIVE	TOTAL NATIVE
7,488 SF	5,616 SF	5,914 SF

75% OF SHRUBS TO BE NATIVE		
TOTAL SHRUBS	REQUIRED NATIVE	TOTAL NATIVE
3,411	2,558	2,558

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Stanwood, WA 98292

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PROJECT TITLE

PLANT SCHEDULE

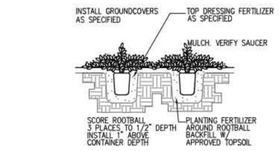
TOLT VILLAS CARNATION, WA

DRAWN	DATE
KJ	06.15.20

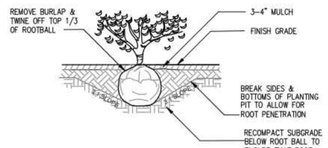
REVISED	DATE
KJ	05.04.21 1
KJ	10.18.21 2
KJ	07.07.22 3
KJ	09.29.22 4

1" = 20'-0"

L2



1 TYPICAL GROUNDCOVER PLANTING DETAIL
NTS



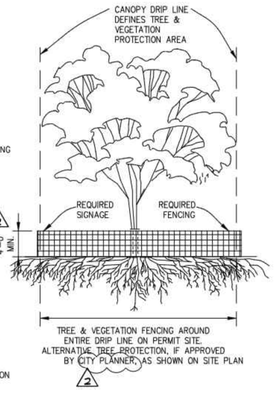
2 TYPICAL SHRUB PLANTING DETAIL
NTS

TREE PROTECTION FENCING AND SIGN

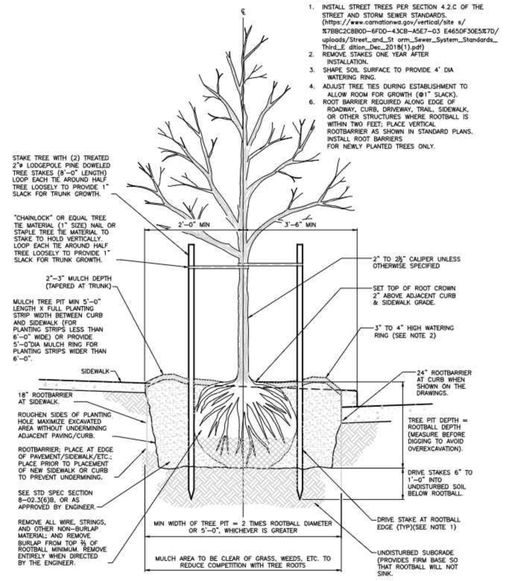
1. CHAIN LINK, WIRE MESH, OR SIMILAR OPEN RIGID MATERIAL (NO PLYWOOD)
2. MUST BE INSTALLED PRIOR TO DEMOLITION OR GROUND DISTURBANCE
3. KEPT IN PLACE FOR THE DURATION OF CONSTRUCTION
4. NO SOIL DISTURBANCE OR ACTIVITY ALLOWED WITHIN FENCED AREA: MATERIAL STORAGE/STOCKPILING, PARKING, EXCAVATION, DUMPING, OR WASHING
5. MODIFICATIONS OF THESE REQUIREMENTS BY APPROVAL OF CITY PLANNER ONLY 2
6. IF ROOTS GREATER THAN 2 INCH FOUND OUTSIDE OF FENCING, PROTECT BY HAND EXCAVATION AND, IF NECESSARY, CUT CLEANLY AND KEEP MOIST. ROOTS GREATER THAN 2 INCHES MUST BE CUT BY OR UNDER THE SUPERVISION OF THE PROJECT ARBORIST. 2
7. USE 3 INCHES OR DEEPER WOOD CHIP MULCH OUTSIDE FENCED AREAS TO PROTECT FEEDER ROOTS

VEGETATION PROTECTION

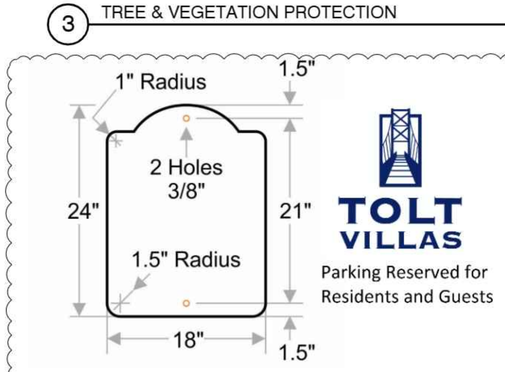
1. ORANGE MESH OR SIMILAR OPEN MATERIAL
2. MINIMIZE CONSTRUCTION ZONE
3. PROTECT VEGETATION OUTSIDE CONSTRUCTION ZONE WITH FENCING AS SHOWN
4. USE 3 INCHES OR DEEPER WOOD CHIP MULCH OUTSIDE FENCED AREAS TO PROTECT FEEDER ROOTS



3 TREE & VEGETATION PROTECTION



5 DECIDUOUS TREE PLANTING IN PLANTING STRIP
NTS



4 PARKING SIGN
NTS

TOLT VILLAS

6 ENTRY SIGN ON CONCRETE PLANTER
NTS

Battery Café and Lounge Tables

MANUFACTURER: MAGLIN
SPECIFICATIONS: CAFE TABLE POWDER-COATED STEEL IN GUNMETAL GREY
DIAMETER:36"
HEIGHT: 29"
WEIGHT 125 LBS.
QUANTITY: 1

7 CAFE TABLE
NTS

MANUFACTURER: MAGLIN
SPECIFICATIONS: THERMALLY MODIFIED ASH WOOD
POWDER-COATED STEEL IN GUNMETAL GREY
LENGTH:64'
HEIGHT:BACKLESS: 18"
SEAT HEIGHT:BACKLESS: 18"
QUANTITY: 1

8 CURVED BENCH
NTS

2300 Series
ICONIC BACKED / BACKLESS BENCHES

MANUFACTURER: MAGLIN
SPECIFICATIONS: THERMALLY MODIFIED ASH WOOD
POWDER-COATED STEEL IN GUNMETAL GREY
LENGTH:70"
HEIGHT:33.3"
SEAT HEIGHT: 18"
WEIGHT 85 LBS.
QUANTITY: 2

9 BENCH
NTS

200 Series
250 RECYCLE RECEPTACLE

MANUFACTURER: MAGLIN
SPECIFICATIONS: POWDER-COATED STEEL FLAT BAR IN GUNMETAL GREY, 2 STREAM, SIDE OPENING
LENGTH:38.3"
WIDTH:21.5"
HEIGHT: 42.6"
SEAT HEIGHT: 17.7"
WEIGHT 212 LBS.
QUANTITY: 3

10 TRASH RECEPTACLES
NTS

MANUFACTURER: MAGLIN
SPECIFICATIONS:FORO CHAIR POWDER-COATED STEEL IN GUNMETAL GREY
WIDTH:19.6"
DEPTH 21.3"
HEIGHT: 30.6" SEAT HEIGHT:17.7"
WEIGHT 16.8 LBS.
QUANTITY:4

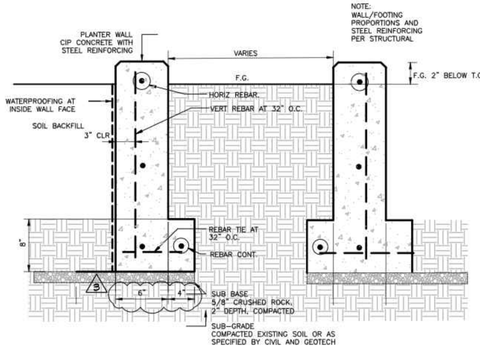
11 TRASH RECEPTACLES
NTS

MANUFACTURER: MAGLIN
SPECIFICATIONS: 4 BIKE RACKS H.S. STEEL TUBE, FORMED STEEL AND SOLID STEEL ANGLE.
LENGTH: 48.3"
HEIGHT: 23.8"
HEIGHT ABOVE GRADE:23.8"
DIAMETER: 24.6"
WEIGHT 78.6 LBS.
QUANTITY: 3 3

12 BIKE RACKS
NTS

MANUFACTURER: URBAN ACCESSORIES
SPECIFICATIONS: OT TITLE-24
TREE GRATE SQUARE, 4'X4' GREY IRON, RAW
QUANTITY: 9

13 TREE GRATES
NTS



14 CIP CONCRETE PLANTER
NTS

Root of Design
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Stanwood, WA 98292

Root of Design

State of Washington registered Landscape Architect
Devin Peterson
Devin Peterson certificate no: 1222

PROJECT TITLE

LANDSCAPE DETAILS

TOLT VILLAS CARNATION, WA

DRAWN	DATE
KL	06.15.20

REVISED	DATE
KL	05.04.21 1
KL	10.18.21 2
KL	07.07.22 3
KL	09.29.22 4

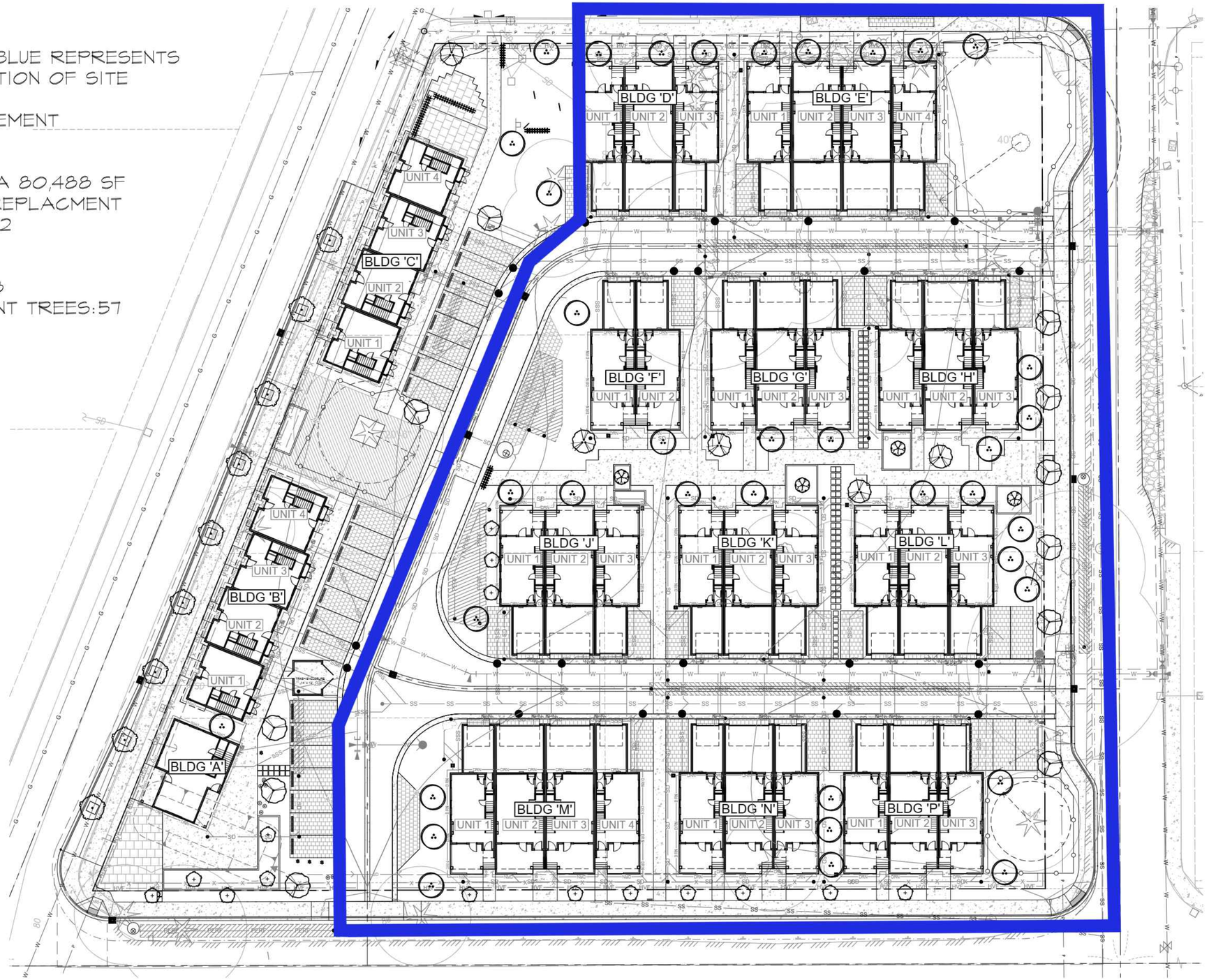
NTS

L3

AREA OUTLINED IN BLUE REPRESENTS APPROXIMATE PORTION OF SITE REQUIRING TREE RETENTION/REPLACEMENT REQUIREMENTS

APPROXIMATE AREA 80,488 SF
TOTAL RETAINED /REPLACMENT TREES REQUIRED: 32

TREES RETAINED:2
TREES REMOVED:28
TOTAL REPLACEMENT TREES:57



TREE REPLACMENT PLAN

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PROJECT TITLE

TREE REPLACEMENT PLAN

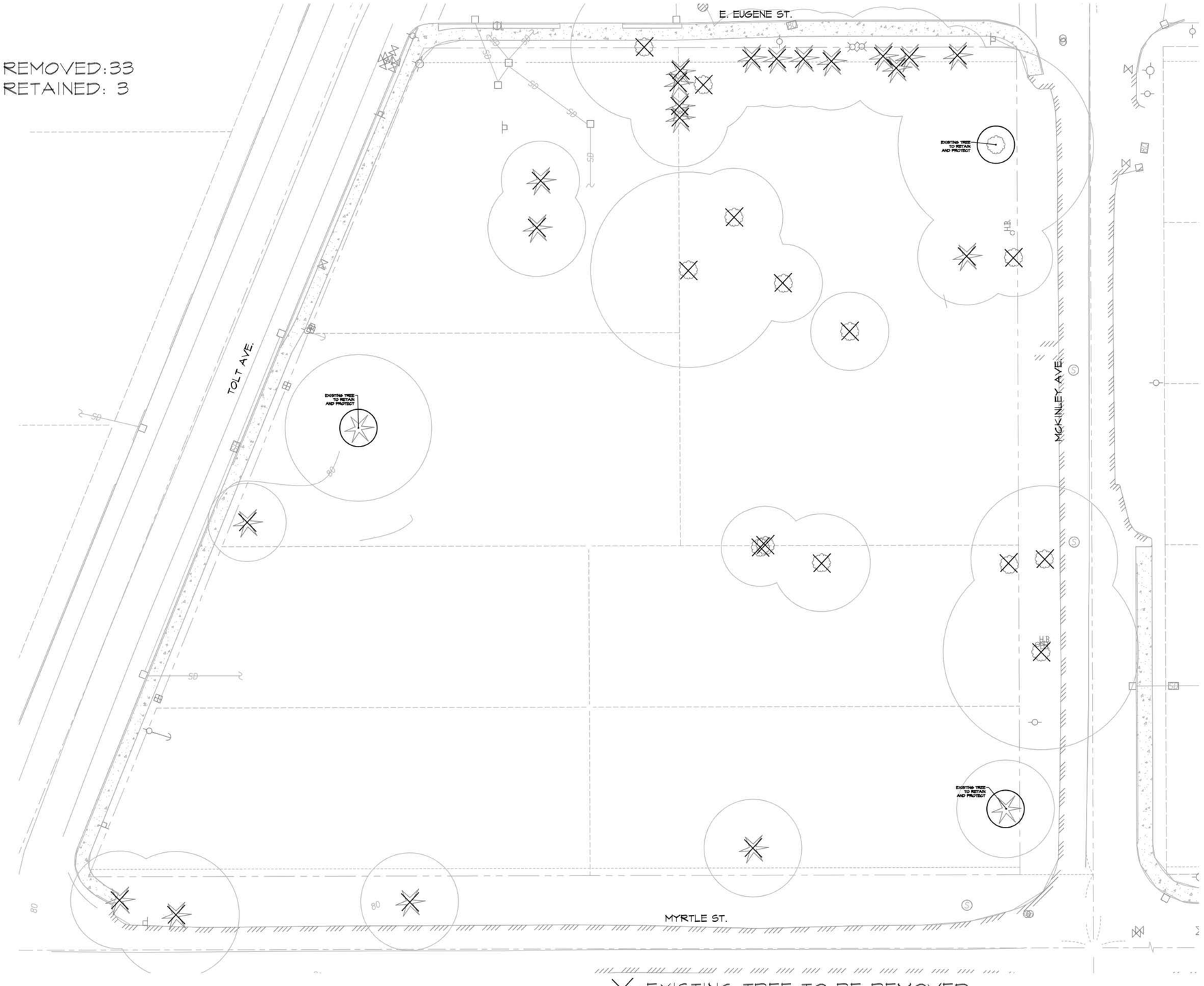
TOLT VILLAS CARNATION, WA

DRAWN	DATE
KJ	10.18.21
REVISED	DATE

1"=20'-0"

T2

TOTAL TREES REMOVED: 33
TOTAL TREES RETAINED: 3



NORTH

TREE RETENTION PLAN

0 20 40 60 feet

SCALE: 1" = 20'-0"

X = EXISTING TREE TO BE REMOVED

◯ = EXISTING TREE TO RETAIN AND PROTECT

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TREE RETENTION PLAN

TOLT VILLAS CARNATION, WA

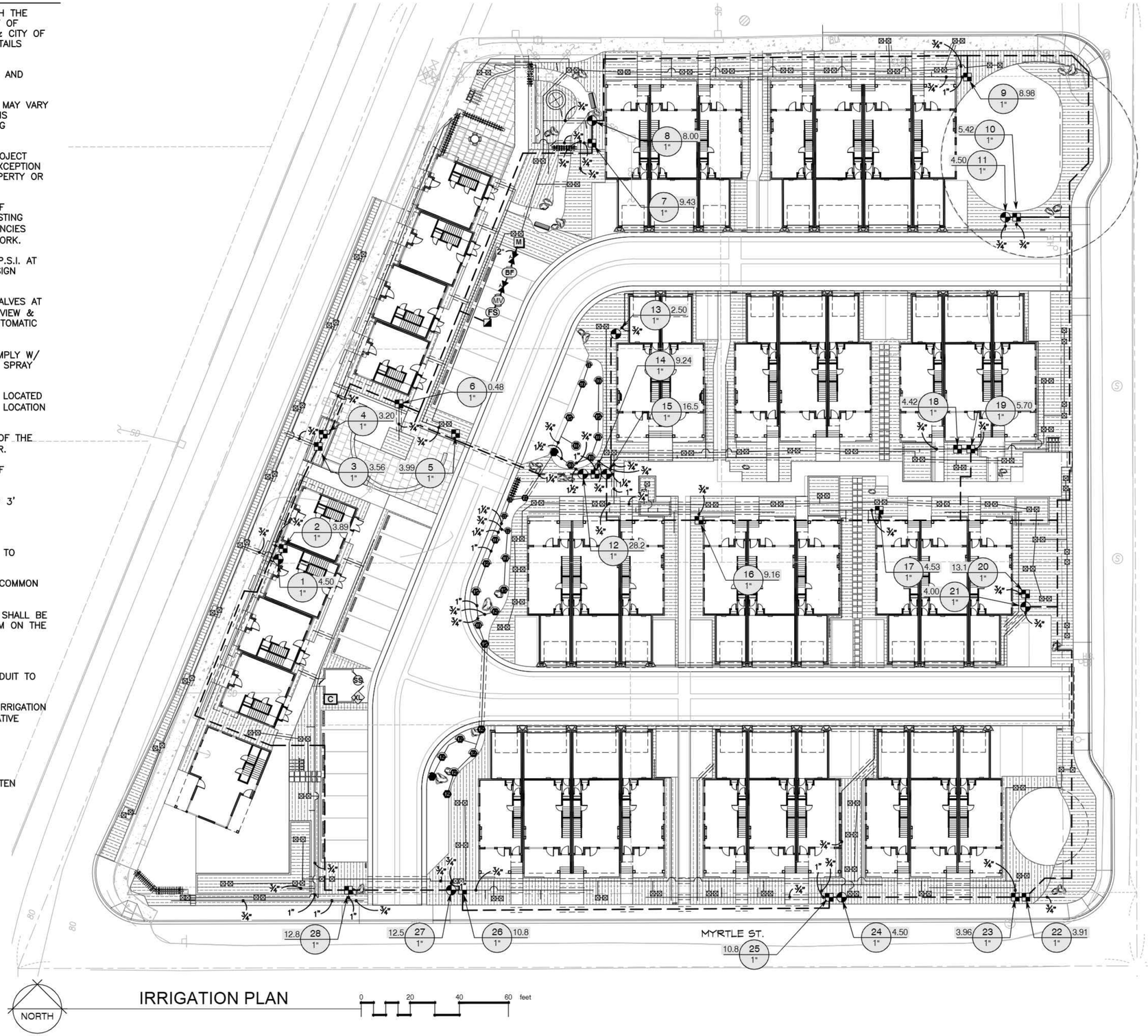
DRAWN	DATE
KJ	10.18.21
REVISED	DATE

1"=20'-0"

T1

IRRIGATION NOTES:

1. PROVIDE & INSTALL ALL IRRIGATION IN CONFORMANCE WITH THE CITY OF CARNATION STANDARDS & DETAILS. IN THE EVENT OF CONFLICT BETWEEN SPECIFICATIONS, NOTES, OR DETAILS & CITY OF CARNATION STANDARDS & DETAILS, THE STANDARDS & DETAILS SHALL TAKE PRECEDENCE.
2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND APPROPRIATE SAFETY REGULATIONS.
3. IRRIGATION DRAWINGS ARE SCHEMATIC. ACTUAL LOCATIONS MAY VARY DUE TO UTILITIES OR EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
4. ALL IRRIGATION EQUIPMENT SHALL BE LOCATED WITHIN PROJECT PROPERTY LINES & WITHIN LANDSCAPE BEDS WITH THE EXCEPTION OF ITEMS IN THE RIGHT OF WAY. ITEMS SHOWN OFF PROPERTY OR IN HARDSCAPE ARE FOR CLARITY ONLY.
5. EXISTING PRESSURE IS 75 PSI. PRIOR TO INSTALLATION OF IRRIGATION SYSTEM, CONTRACTOR SHALL FIELD VERIFY EXISTING P.S.I. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN THE DESIGN P.S.I. PRIOR TO PROCEEDING W/ WORK.
6. SYSTEM DESIGNED TO 30 P.S.I. AT SPRAY HEADS, & 30 P.S.I. AT DRIP EMITTERS. SEE IRRIGATION SCHEDULE FOR HEAD DESIGN PRESSURES.
7. LOCATE QUICK COUPLING VALVE & AUTOMATIC CONTROL VALVES AT POINT OF EASY ACCESS. OWNER'S REPRESENTATIVE TO REVIEW & APPROVE FINAL LOCATION OF ALL QUICK COUPLERS & AUTOMATIC CONTROL VALVES PRIOR TO INSTALLATION.
8. HEAD LOCATION MUST BE ADJUSTED IN THE FIELD TO COMPLY W/ EXISTING SITE CONDITIONS AND PLANT MATERIALS. ADJUST SPRAY PATTERN FOR MAXIMUM COVERAGE.
9. ALL IRRIGATION SLEEVING TO BE STAKED IN THE FIELD & LOCATED ON DIMENSIONED "AS-BUILT" DRAWING TO ALLOW FUTURE LOCATION & USE.
11. ALL IRRIGATION SLEEVES SHALL BE TWICE THE DIAMETER OF THE INSERT PIPE(S). SLEEVES SHALL NOT EXCEED 6" DIAMETER.
12. PVC MAINLINE LOCATIONS ARE SCHEMATIC. NO BENDING OF MAINLINE PIPE.
13. NO VALVE MANIFOLDS. GROUP VALVES TOGETHER W/ TEES 3' APART.
14. VALVE BOXES SHALL BE LEVEL & OPEN SAME DIRECTION.
15. AIR BLOW IRRIGATION SYSTEM THROUGH QUICK COUPLERS TO WINTERIZE IRRIGATION SYSTEM.
16. PIPES TO SHARE TRENCHES WHERE POSSIBLE. SEPARATE COMMON PIPING BY 6" MIN.
17. WHERE PIPE SIZES ARE NOT SHOWN ON THE PLAN, PIPE SHALL BE SIZED TO THE NEXT LARGEST PIPE SIZE SHOWN UPSTREAM ON THE PLAN.
18. LETTERS ON PIPING SHALL BE ROTATED TO FACE UP.
14. GENERAL CONTRACTOR TO PROVIDE AND INSTALL ALL CONDUIT TO CONTROLLER LOCATIONS & POINTS OF CONNECTION.
15. GENERAL CONTRACTOR TO PROVIDE POWER SOURCE FOR IRRIGATION CONTROLLER. (VERIFY LOCATION W/ OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK)
16. INSTALL FLOW SENSOR PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
16. INSTALL SOLAR SYNC SENSOR PER MANUFACTURER'S WRITTEN INSTRUCTIONS.



IRRIGATION PLAN

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PO BOX 522
WOODINVILLE, WA 98072

Design Team

Design: JA
Drawn: JA
Checked: JA
Date: 07/09/2022
2426 Project No.: 829
Approved/Date

Revisions

No.	Date	Description

Key Plan

Registration

STATE OF WASHINGTON · JASON M. ANDERSON · 09236 EXP. 08/24/2022 · LANDSCAPE ARCHITECT

Sheet Title

IRRIGATION PLAN & NOTES

Sheet No.

LI-1

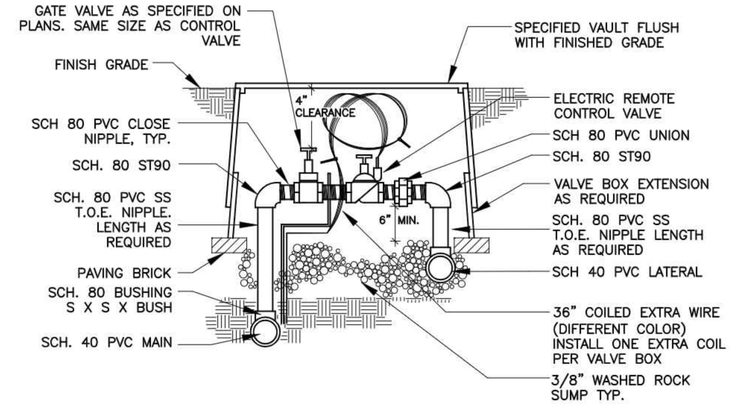
IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI
Q T H F	HUNTER PROS–06–PRS30–CV 8' RADIUS TURF SPRAY, 30 PSI REGULATED 6.0" POP–UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE. CO–MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30
Q T H F	HUNTER PROS–06–PRS30–CV 10' RADIUS TURF SPRAY, 30 PSI REGULATED 6.0" POP–UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE. CO–MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30
Q T H TT F	HUNTER PROS–06–PRS30–CV 12' RADIUS TURF SPRAY, 30 PSI REGULATED 6.0" POP–UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE. CO–MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30
Q T H TT TQ F	HUNTER PROS–06–PRS30–CV 15' RADIUS TURF SPRAY, 30 PSI REGULATED 6.0" POP–UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE. CO–MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30
	HUNTER PROS–06–PRS30–CV ADJUSTABLE ARC TURF SPRAY, 30 PSI REGULATED 6.0" POP–UP. WITH FACTORY INSTALLED DRAIN CHECK VALVE. CO–MOLDED WIPER SEAL WITH UV RESISTANT MATERIAL.	30
0.25 0.50	HUNTER RZWS–SLEEVE–10–CV 25 10" LONG RZWS WITH SLEEVE INSTALLED. .25 GPM OR .50 GPM BUBBLER OPTIONS, AND 1/2" SWING JOINT FOR CONNECTION TO 1/2" PIPE,CHECK VALVE	30
0.25 0.50	HUNTER RZWS–SLEEVE–36–CV 25 36" LONG RZWS WITH FILTER FABRIC SLEEVE, .25 GPM OR .50 GPM BUBBLER OPTIONS, CHECK VALVE, 1/2" SWING JOINT FOR CONNECTION TO 1/2" PIPE	30

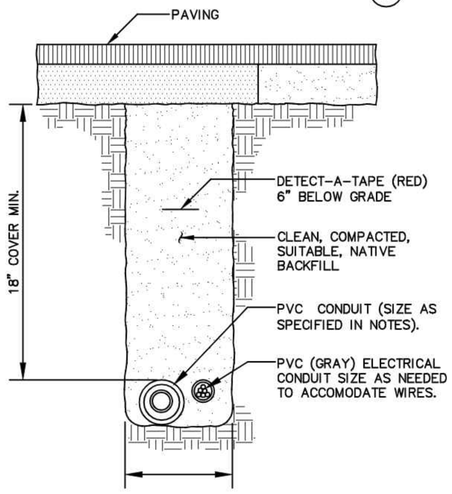
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	HUNTER ICV–G 1", 1–1/2", 2", AND 3" PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.
	HUNTER HQ–44LRC–AW QUICK COUPLER VALVE, YELLOW RUBBER LOCKING COVER, RED BRASS AND STAINLESS STEEL, WITH 1" NPT INLET, 2–PIECE BODY. ACME KEY WITH ANTI–ROTATION WINGS.
	MATCO–NORCA 513T 3/4"–2" BRONZE GATE VALVE, FULL PORT, HEAVY DUTY, NON–RISING STEM. IPS, WHEEL HANDLE. SAME SIZE AS MAINLINE PIPE.
MV	HUNTER ICV–G 2" 1", 1–1/2", 2", AND 3" PLASTIC ELECTRIC MASTER VALVE, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.
BF	REDUCED PRESSURE BACKFLOW PREVENTER 1–1/2" PROVIDED BY CIVIL
C	HUNTER IC–3000–M MODULAR CONTROLLER, 30 STATIONS, OUTDOOR MODEL, METAL CABINET. COMMERCIAL USE. WITH FOUR ICM–600 MODULES INCLUDED.
XL	HUNTER ROAMXL–KIT TRANSMITTER AND RECEIVER. ROAM REMOTE ALLOWS FOR CONTROLLER OPERATION UP TO 2 MILES. CONTRACTOR, LARGE–SCALE SITES. WORKS WITH HUNTER ACC, I–CORE, PRO–C, PCC, AND X–CORE CONTROLLERS. SMARTPORT WIRING HARNESS INCLUDED.
SS	HUNTER SOLAR–SYNC SOLAR, RAIN FREEZE SENSOR WITH OUTDOOR INTERFACE, CONNECTS TO HUNTER PCC, PRO–C, AND I–CORE CONTROLLERS, INSTALL AS NOTED. INCLUDES 10 YEAR LITHIUM BATTERY AND RUBBER MODULE COVER, AND GUTTER MOUNT BRACKET. WIRED.
FS	FLOMEC QS200–20 2" 2" INSERTION FLOWMETER, SCHEDULE 80 PVC HOUSING. 0.92–138 GPM RANGE, MAX. OPERATING PRESSURE 150PSI. 2–WIRE CONNECTOR W/ LED INDICATORS FOR POWER AND PULSE. STORAGE TEMPS –20 F TO +160 F.
M	WATER METER 1–1/2" IRRIGATION METER PROVIDED BY CIVIL
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40
	IRRIGATION MAINLINE: PVC SCHEDULE 40
	PIPE SLEEVE: PVC SCHEDULE 40

Valve Callout
Valve Number
Valve Flow
Valve Size

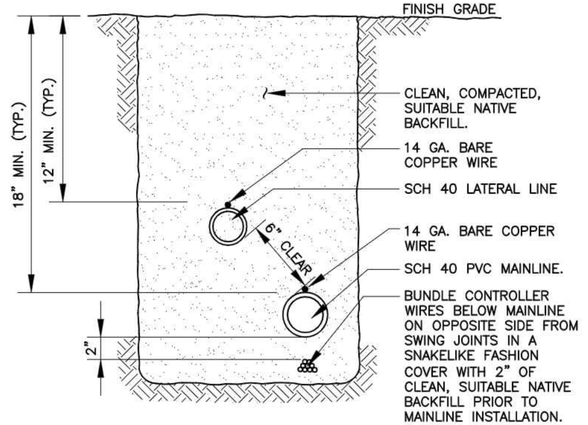
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	HUNTER ICZ–101–40–LF DRIP CONTROL ZONE KIT. 1" ICV GLOBE VALVE WITH 1" HY100 FILTER SYSTEM. PRESSURE REGULATION: 40PSI. FLOW RANGE: .5–15 GPM. 150 MESH STAINLESS STEEL SCREEN.
	AREA TO RECEIVE DRIPLINE HUNTER HDL–06–18–CV HDL–06–18–CV: HUNTER DRIPLINE W/ 0.6 GPH EMITTERS AT 18" O.C. CHECK VALVE, DARK BROWN TUBING WITH GRAY STRIPING. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL WITH HUNTER PLD BARBED OR PLD–LOC FITTINGS.



1 AUTOMATIC CONTROL VALVE

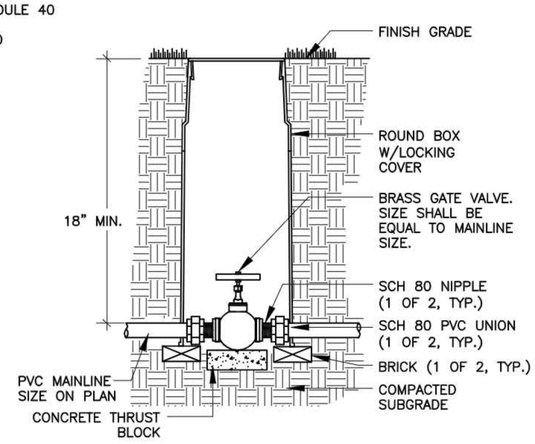


2 TRENCHING UNDER PAVING

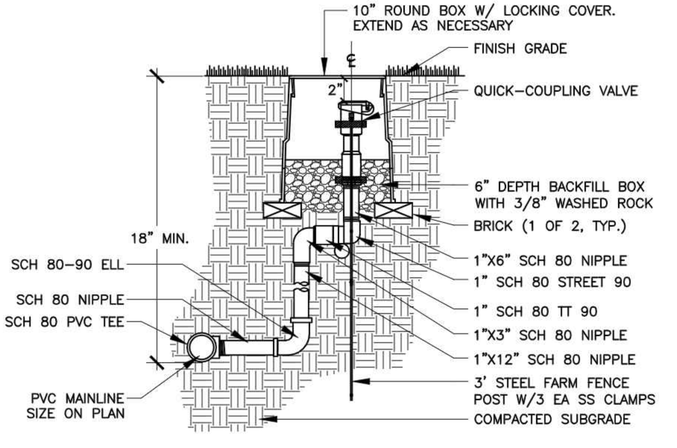


NOTE:
TAPE WIRES TOGETHER EVERY 10', BUT DO NOT TAPE BUNDLED WIRES TO MAINLINE.

3 TRENCHING



4 GATE VALVE



5 QUICK COUPLING VALVE

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Design Team

Design: JA
Drawn: JA
Checked: JA
Date: 07/09/2022
2426 Project No.: 829
Approved/Date

Revisions

No.	Date	Description

Key Plan

Registration

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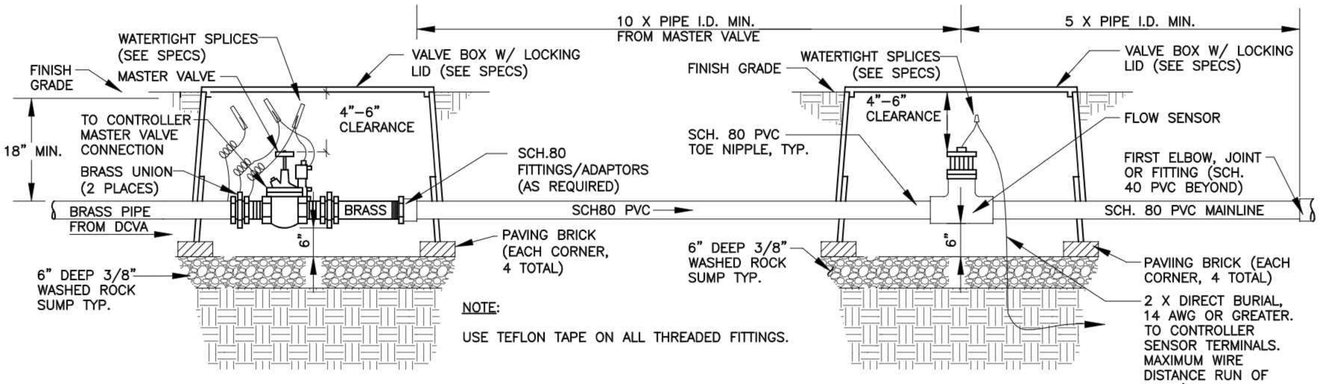
Sheet Title

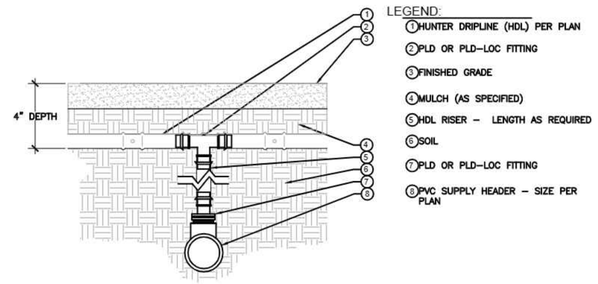
IRRIGATION SCHEDULE & DETAILS

Sheet No.

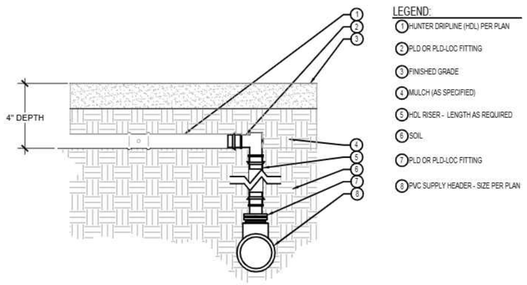
LI-2



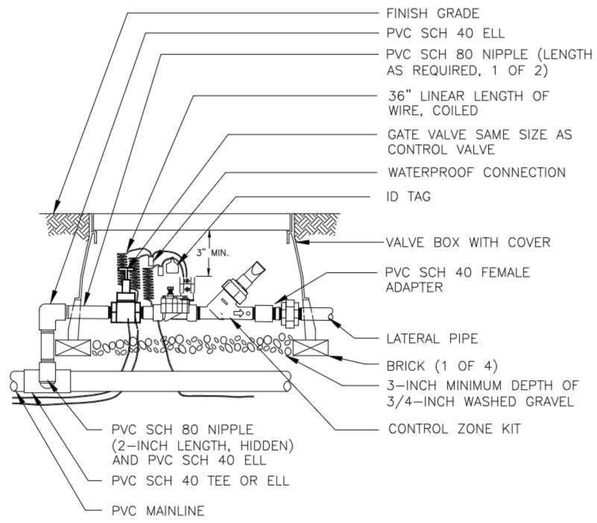
1 MASTER VALVE & FLOW SENSOR



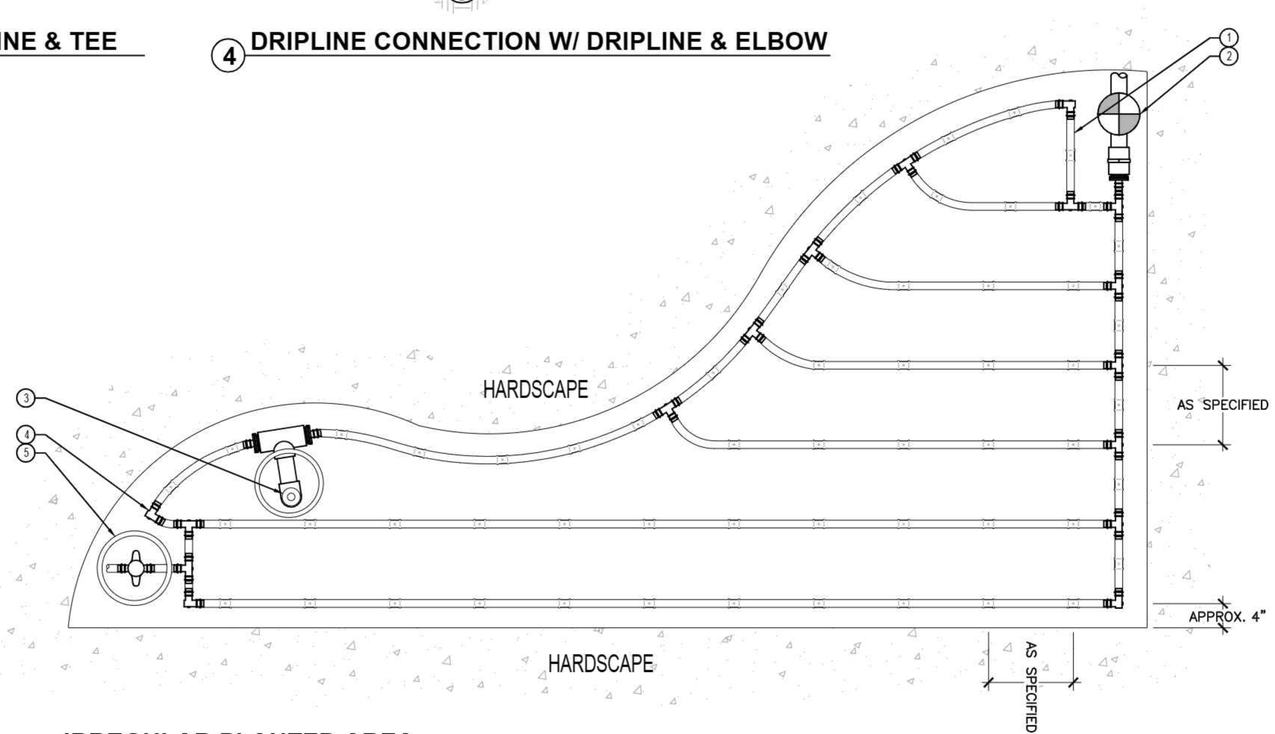
3 DRIPLINE CONNECTION W/ DRIPLINE & TEE



4 DRIPLINE CONNECTION W/ DRIPLINE & ELBOW



2 DRIP AUTOMATIC CONTROL VALVE



5 IRREGULAR PLANTED AREA

LEGEND:

1. HUNTER DRIPLINE PER PLAN
2. DRIP CONTROL ZONE KIT PER PLAN
3. AIR RELIEF VALVE IN VALVE BOX (ONLY FOR CHANGES IN HEIGHT OF GREATER THAN 6' ON THE SAME ZONE)
4. PLD OR PLD–LOCK FITTING (TYP.)
5. FLUSH POINT (PLD–BV) IN SUBTERRANEAN BOX PER PLAN

NOTES:
AIR RELIEF VALVE (PLD–AVR) INSTALLED IN VALVE BOX AT OPTIMAL HIGHEST POINT FROM CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE.

FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.

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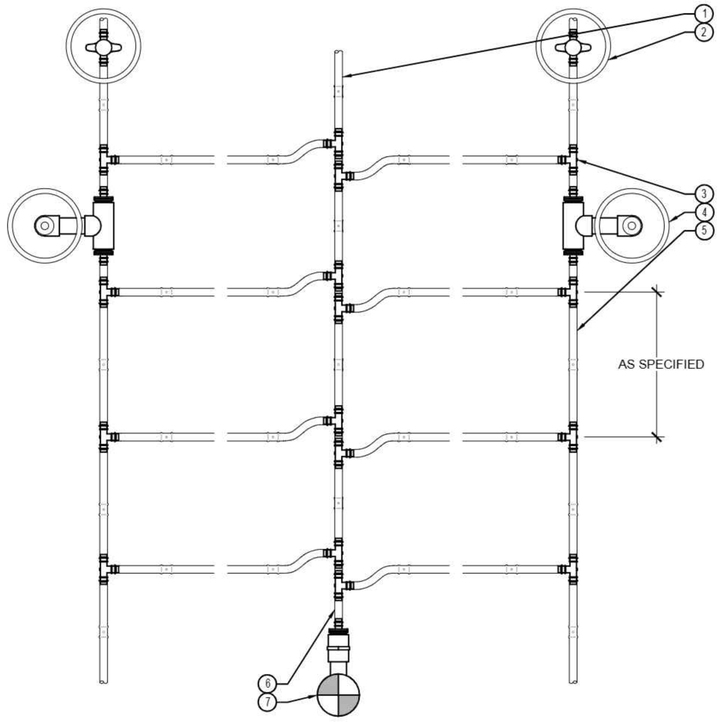
Sheet Title

IRRIGATION DETAILS

Sheet No.

LI-3



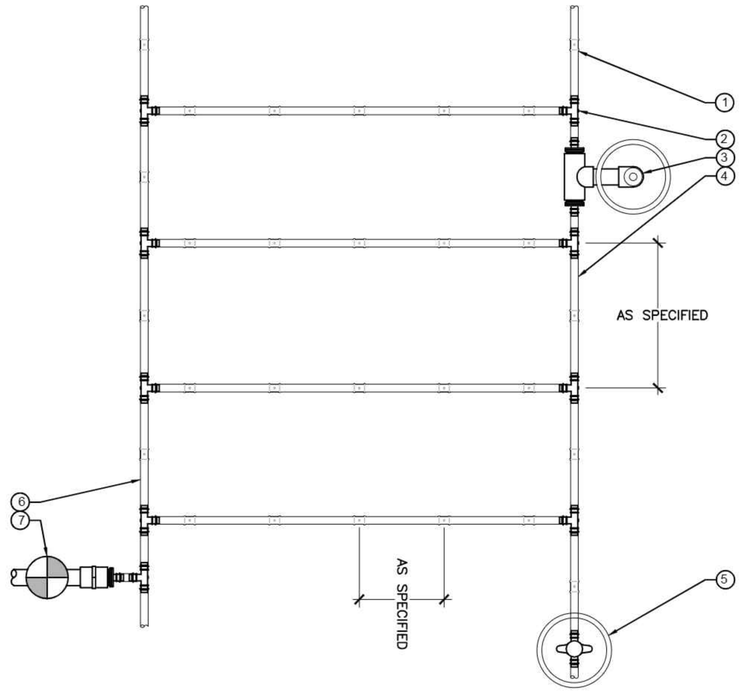
LEGEND:

1. HUNTER DRIPLINE (HDL) PER PLAN
2. FLUSH POINT (PLD–BV) IN SUBTERRANEAN BOX PER PLAN
3. PLD OR PLD–LOC FITTINGS TYP.
4. AIR RELIEF VALVE IN VALVE BOX (ONLY FOR CHANGES IN HEIGHT OF GREATER THAN 6' ON THE SAME ZONE)
5. PLD TUBING EXHAUST HEADER
6. HDL TUBING SUPPLY HEADER
7. DRIP CONTROL ZONE KIT PER PLAN

NOTES:
AIR RELIEF VALVE (PLD–AVR) INSTALLED IN VALVE BOX AT OPTIMAL HIGHEST POINT FROM CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE.

FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.

1 PLANTING BED CENTER FEED



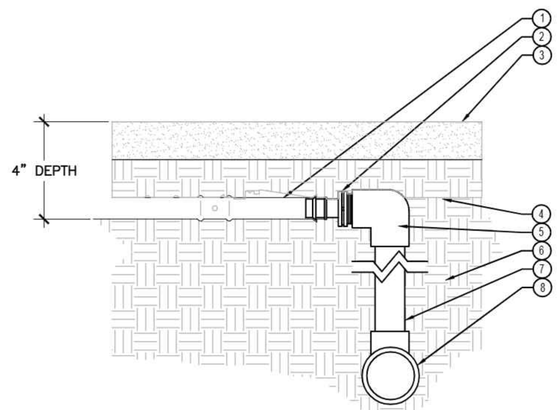
LEGEND:

1. HUNTER DRIPLINE (HDL) PER PLAN
2. PLD OR PLD–LOC FITTINGS TYP.
3. AIR RELIEF VALVE IN VALVE BOX (ONLY FOR CHANGES IN HEIGHT OF GREATER THAN 6' ON THE SAME ZONE)
4. HDL TUBING EXHAUST HEADER
5. FLUSH POINT (PLD–BV) IN SUBTERRANEAN BOX PER PLAN
6. HDL TUBING SUPPLY HEADER
7. DRIP CONTROL ZONE KIT PER PLAN

NOTES:
AIR RELIEF VALVE (PLD–AVR) INSTALLED IN VALVE BOX AT OPTIMAL HIGHEST POINT FROM CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE.

FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.

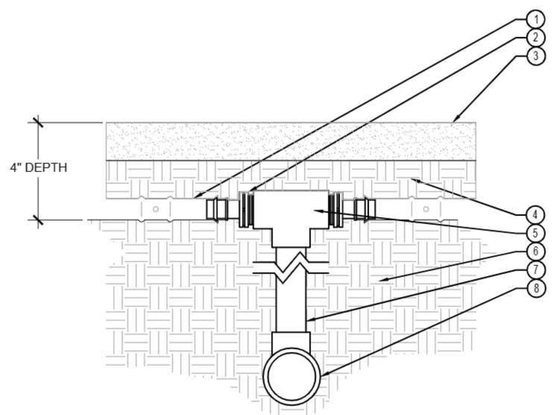
2 PLANTING BED



LEGEND:

1. HUNTER DRIPLINE (HDL) PER PLAN
2. PLD OR PLD–LOC FITTING
3. FINISHED GRADE
4. MULCH (AS SPECIFIED)
5. PVC ELBOW
6. SOIL
7. PVC RISER – SIZE AND LENGTH AS REQUIRED
8. PVC SUPPLY HEADER – SIZE PER PLAN

3 CONNECTION W/ PVC RISER & ELBOW



LEGEND:

1. HUNTER DRIPLINE (HDL) PER PLAN
2. PLD OR PLD–LOC FITTING
3. FINISHED GRADE
4. MULCH (AS SPECIFIED)
5. PVC TEE
6. SOIL
7. PVC RISER – SIZE AND LENGTH AS REQUIRED
8. PVC SUPPLY HEADER – SIZE PER PLAN

4 DRIPLINE CONNECTION W/ PVC RISER & TEE

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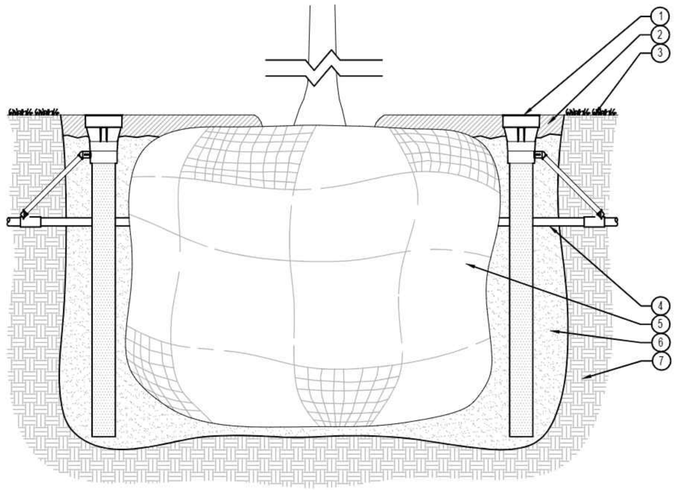
Sheet Title

IRRIGATION DETAILS

Sheet No.

LI-4

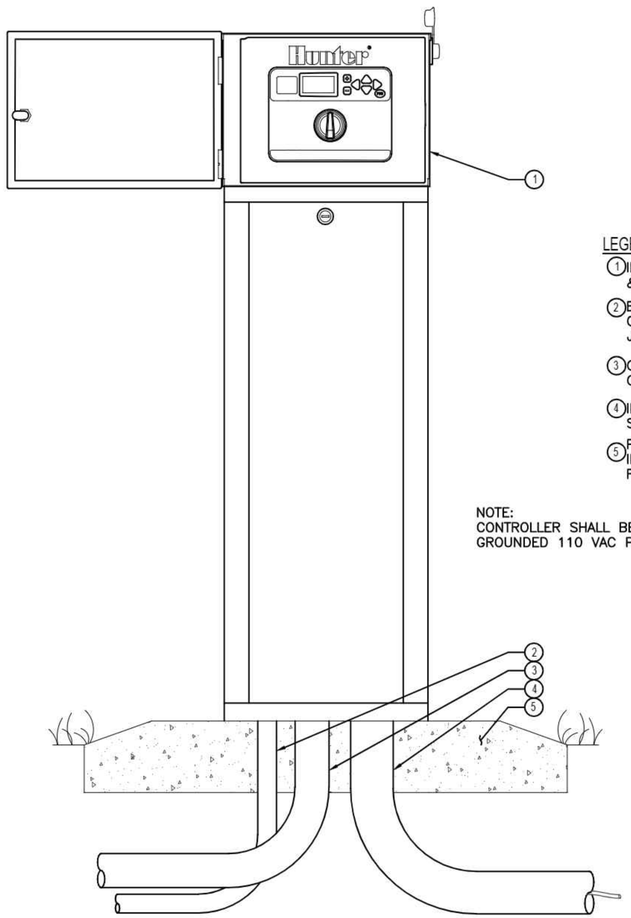


LEGEND:

1. 36" ROOT ZONE WATERING SYSTEM PER PLAN
2. MULCH
3. FINISHED GRADE
4. LATERAL PIPE – SIZE PER PLAN
5. ROOT BALL
6. AMENDED SOIL
7. NATIVE SOIL

NOTES:
INSTALL RZWS SLEEVE OVER TUBE TO HELP PREVENT SOIL INTRUSION

1 ROOT ZONE WATERING SYSTEM

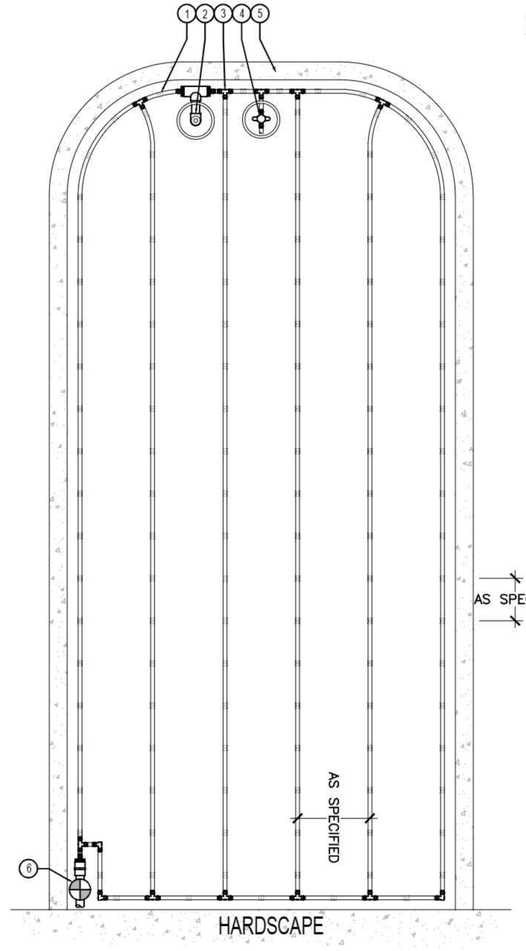


LEGEND:

1. IRRIGATION CONTROLLER (I CORE) & PEDESTAL PER PLAN
2. ELECTRICAL SUPPLY CONDUIT CONNECT TO POWER SOURCE, J–BOX INSIDE CONTROLLER
3. GROUND WIRE CONDUIT GROUND PER ASIC GUIDELINES
4. IRRIGATION CONTROL WIRE IN CONDUIT SIZE & TYPE PER LOCAL CODES
5. PEDESTAL BASE PER PLAN INSURE POSITIVE DRAINAGE AWAY FROM PEDESTAL

NOTE:
CONTROLLER SHALL BE HARD–WIRED TO GROUNDED 110 VAC POWER SOURCE

3 IRRIGATION CONTROLLER IN METAL PEDESTAL



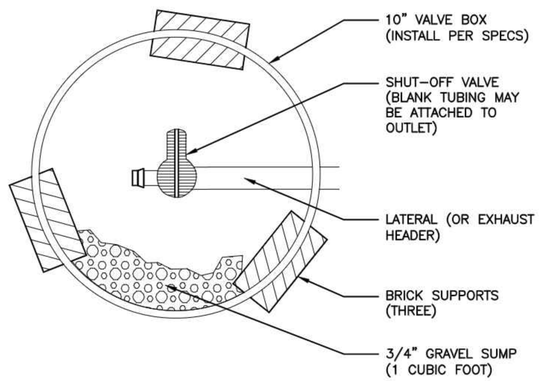
LEGEND:

1. HUNTER DRIPLINE (HDL) PER PLAN
2. AIR RELIEF VALVE IN VALVE BOX(ONLY FOR CHANGES IN HEIGHT OF GREATER THAN 6' ON THE SAME ZONE)
3. PLD OR PLD–LOC FITTINGS TYP.
4. FLUSH POINT (PLD–BV) IN SUBTERRANEAN BOX PER PLAN
5. LANDSCAPE ISLAND CURB
6. DRIP CONTROL ZONE KIT PER PLAN

NOTES:
AIR RELIEF VALVE (PLD–AVR) INSTALLED IN VALVE BOX AT OPTIMAL HIGHEST POINT FROM CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE.

FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.

2 PARKING LOT ISLAND



4 MANUAL FLUSH VALVE

Design Two Four/Two Six
14835 161ST COURT SE
RENTON, WA 98059-8819
ph. (425) 881-2426
cll. (206) 335-7719
www.design2426.com
Landscape Architecture • Irrigation Planning • Athletic Field Design • Construction Management

TOLT VILLAS

CARNATION, WA 98014

TOLT VILLAS, LLC.
PO BOX 522
WOODINVILLE, WA 98072

Design Team

Design: JA
Drawn: JA
Checked: JA
Date: 07/09/2022
2426 Project No.: 829
Approved/Date:

Revisions

No.	Date	Description

Key Plan

Registration

STATE OF WASHINGTON · JASON M. ANDERSON · 20936 EXP 08/24/2022 · LANDSCAPE ARCHITECT

Sheet Title

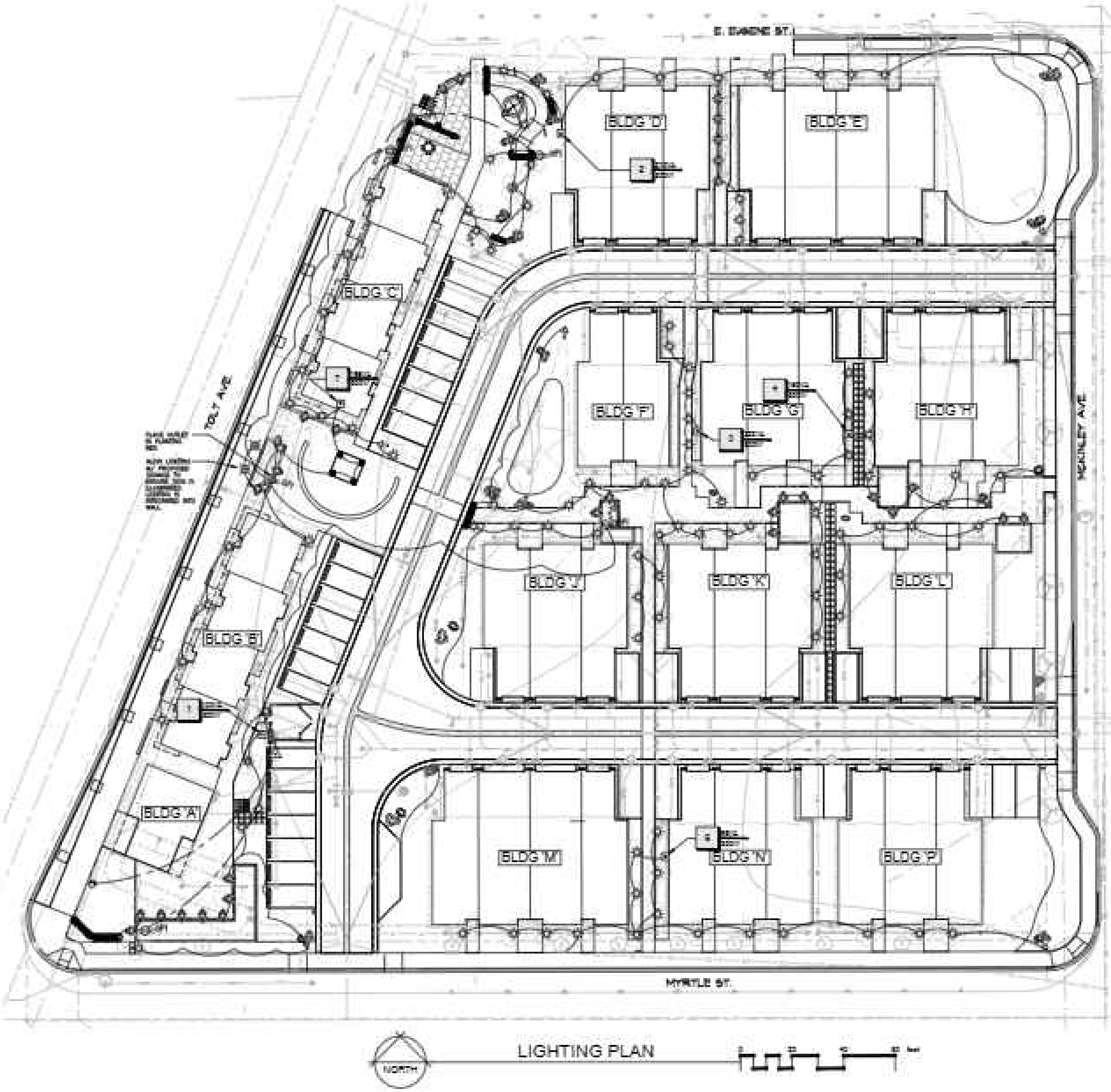
IRRIGATION DETAILS

Sheet No.

LI-5

LIGHTING NOTES:

1. PROVIDE & INSTALL ALL LIGHTING IN CONFORMANCE WITH THE CITY OF CARNATION STANDARDS & DETAILS. IN THE EVENT OF CONFLICT BETWEEN SPECIFICATIONS, NOTES, OR DETAILS & CITY OF CARNATION STANDARDS & DETAILS, THE STANDARDS & DETAILS SHALL TAKE PRECEDENCE.
2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND APPROPRIATE SAFETY REGULATIONS.
3. IRRIGATION DRAWINGS ARE SCHEMATIC. ACTUAL LOCATIONS MAY VARY DUE TO UTILITIES OR EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
4. ALL IRRIGATION EQUIPMENT SHALL BE LOCATED WITHIN PROJECT PROPERTY LINES & WITHIN LANDSCAPE BEDS WITH THE EXCEPTION OF ITEMS IN THE RIGHT OF WAY. ITEMS SHOWN OFF PROPERTY OR IN HARDSCAPE ARE FOR CLARITY ONLY.
5. DO NOT TAKE MEASUREMENTS FROM PLANS FOR DEVICE LOCATIONS. FIELD VERIFY EXACT DEVICE AND EQUIPMENT LOCATIONS AND MOUNTING HEIGHTS W/ OWNER'S REPRESENTATIVE FOR PROPER INSTALLATION.
6. EXTERIOR MOUNTED ELECTRICAL DEVICES SHALL BE NEMA-3R WEATHERPROOF COVERS.
7. ONE-LINE DIAGRAM & CONDUIT ROUTING ARE SCHEMATIC & DO NOT SHOW EXACT PHYSICAL ARRANGEMENT OF EQUIPMENT WHERE INDICATED ON DRAWINGS. JUNCTION BOXES, & PULLBOXES ARE MINIMUM REQUIREMENTS. PROVIDE FITTINGS & PULLBOXES OF ADEQUATE SIZE IN THE RACEWAY SYSTEM WHEREVER NECESSARY OR REQUIRED BY NATIONAL ELECTRICAL CODE. PROVIDE EXPANSION JOINT FITTINGS FOR CONDUITS PASSING THROUGH NEW OR EXISTING EXPANSION JOINTS INSTALLED BETWEEN BUILDINGS. VERIFY EXACT LOCATIONS AND DETAILS OF EXPANSION JOINTS PRIOR TO WORK. COORDINATE ALL CONDUIT ROUTING, PULLBOX, & EQUIPMENT LOCATIONS W/ OTHER TRADES TO AVOID CONFLICTS OF EQUIPMENT INSTALLATIONS. ALL EMPTY CONDUITS SHALL HAVE PULL WIRES.
8. ROUTE ALL SITE LIGHTING THROUGH LIGHTING CONTROLS.
9. ALL SLEEVING TO BE STAKED IN THE FIELD & LOCATED ON DIMENSIONED "AS-BUILT" DRAWING TO ALLOW FUTURE LOCATION & USE.
11. PIPES TO SHARE TRENCHES WHERE POSSIBLE. SEPARATE COMMON PIPING BY 6" MIN.
14. GENERAL CONTRACTOR TO PROVIDE AND INSTALL ALL CONDUIT TO CONTROLLER LOCATIONS & POINTS OF CONNECTION.
15. GENERAL CONTRACTOR TO PROVIDE POWER SOURCE FOR CONTROLLER (VERIFY LOCATION W/ OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK)
16. THIS PLAN IS INTENDED FOR LANDSCAPE LIGHTING PURPOSES ONLY. ALL LIGHTING FIXTURES AND TRANSFORMERS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
17. FIXTURES ARE SHOWN IN APPROXIMATE LOCATION. THE CONTRACTOR SHOW FIELD VERIFY THE ACTUAL PLACEMENT OF EACH FIXTURE UPON COMPLETION OF LANDSCAPE INSTALLATION.
18. ALL PATH LIGHTS ARE TO BE INSTALLED AT A MINIMUM OF 12 INCHES FROM ANY SIDEWALK OR VERTICAL STRUCTURE.
19. ALL LOW-VOLTAGE DIRECT BURIAL WIRE TO BE INSTALLED AT >/= 6" BELOW FINISH GRADE PER ELECTRICAL CODE.
20. IN ORDER TO MINIMIZE FUTURE DISTURBANCE, ALL WIRE RUNS SHALL BE INSTALLED PARALLEL AND ADJACENT TO HARD SURFACES SUCH AS SIDEWALKS DRIVEWAYS AND WALLS.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING SLEEVES UNDER ALL HARDSCAPE SURFACES USING A MINIMUM 1 INCH PVC PIPE.
22. ALL UNDERGROUND SPLICES SHALL BE UL-486RATED AND INSTALLED IN UNDERGROUND J-BOXES WITH WATER TIGHT CONNECTIONS LEAVING 24 INCHES OF EXCESS WIRE SLACK.
23. ALL EXTERIOR 120 - VOLT ELECTRICAL OUTLETS SHALL BE GFI PROTECTED AS PER NATIONAL ELECTRICAL CODE.
24. ALL TRANSFORMERS PLUGGED INTO AN OUTDOOR RECEPTACLE SHALL HAVE AN "IN USE" COVER. CONTRACTOR SHALL INSTALL TAYMAC TYPE COVERS AT ALL OUTLETS.
25. ALL PLUG-IN TRANSFORMERS SHALL HAVE A DRIP LOOP IN THE POWER CORD.
26. ALL EXPOSED CONDUIT'S SHALL BE PAINTED TO MATCH SURROUNDINGS.
27. THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE FIXTURES AT NIGHT TO HELP ELIMINATE GLARE AND TO ENSURE OPTIMUM LIGHTING EFFECT.
28. CONTRACTOR TO VERIFY A MINIMUM OF 11 VOLTS FOR 20C AT THE LAST AT THE LAST FIXTURE FOR OPTIMAL OPERATION.
29. CONTRACTOR TO CENTER FEED THE SYSTEM WHEN AT ALL POSSIBLE AND VERIFY ALL WIRE CONNECTIONS ARE AT THE FIXTURES.
30. ALL WIRE CONNECTIONS AT FIXTURES SHALL BE MADE USING WATER TIGHT CONNECTIONS.
31. CONTRACTOR TO PROVIDE CAT5 CONNECTION CONNECTION FOR SATELLITE TRANSFORMERS.



LIGHTING PLAN

Design Two Four/Two Six

TOLT VILLAS

CARNATION, WA 98014

TOLT VILLAS, LLC.
PO BOX 822
WOODINVILLE, WA 98072

09/15/2021

LIGHTING PLAN & NOTES

LP-1

LIGHTING SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
GFI	GFI POWER OUTLET	6
	FX LUMINAIRE BOLLARD A-BR10 – 5V – L10 – K27 – FR – CP	1
	LCM-HV LUXOR CUBE – LINE-VOLTAGE	1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	FX LUMINAIRE NP LARGE DIRECTIONAL UP LIGHT IDEAL FOR LARGE LANDSCAPE FEATURES. 8.38" H X 2.66" DIA. ORDER CODE: NP, ALUMINUM ALLOY, (FB) FLAT BLACK, LONG SLOT SPIKE LAMP: NP-6LED, 8.2W|9.7VA, 2700K, BEAMSPREAD: NARROW FLOOD ACCESSORIES: HEX BAFFLE-MR16	6
	FX LUMINAIRE CA MACHINED COPPER AND BRASS PATH LIGHT FIXTURE WITH GRANDE TOP ASSEMBLY. 7.4" D. DEFAULT RISER HEIGHT 12". ORDER CODE: CA, COPPER AND BRASS, (AB) ANTIQUE BRONZE, LONG SLOT SPIKE LAMP: CA-3LEDT, 4.2W|4.5VA, BEAMSPREAD: FLOOD ACCESSORIES: (12R) 12" RISER	111
	FX LUMINAIRE RP IDEAL FIXTURE FOR IN GRADE LANDSCAPE APPLICATIONS. 6.75" DIA X 11.0" H. ORDER CODE: RP, BRASS, (BS) NATURAL BRASS, DIRECT MOUNT LAMP: 20B MR-16 LED WARM FLOOD, 4W|4.3VA, 2700K, BEAMSPREAD: FLOOD	20
	FX LUMINAIRE PB IDEAL SELECTION FOR LARGE BROAD OBJECTS OR WASHING LIGHT. 2.23" W X 6.72" H X 4.03" L. ORDER CODE: PB, ALUMINUM ALLOY, (FB) FLAT BLACK, LONG SLOT SPIKE LAMP: PB-3LEDT, 4.2W|4.5VA, BEAMSPREAD: FLOOD	9
	FX LUMINAIRE PD LARGE WALL/LOUVER LIGHT. 9" W X 3.5" H X 2.375" D. ORDER CODE: PD, BRASS, (AB) ANTIQUE BRONZE, DIRECT MOUNT LAMP: PD-3LED, 4.2W|4.5VA, 3900K, BEAMSPREAD: WIDE FLOOD	26
	FX LUMINAIRE VO – ZD – 1LED – RD – SS MACHINED 316 MARINE-GRADE STAINLESS STEEL HARDSCAPE LIGHT. 1.9" DIA X 2.4" L. ORDER CODE: VO, STAINLESS STEEL, (SS) STAINLESS STEEL, CONSTRUCTION SLEEVE LAMP: VO-1LED, 2.8W|3.3VA, 3900K, BEAMSPREAD: FLOOD	2

INCLUDE ZDC (ZONE/DIM/COLOR) OPTION ON ALL FX LUMINAIRE FIXTURES

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	ELECTRICAL PANEL	1
	FX LUMINAIRE LUXOR 300	1
	FX LUMINAIRE LUXOR 300 LSAT	5

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	#12 – COPPER AWG – LOW-VOLTAGE DIRECT-BURIAL	2,882 LF
	#12 – COPPER AWG – UF-B	250 LF

QUANTITIES SHOWN IN SCHEDULES ARE SHOWN AS A COURTESY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL QUANTITIES.

DETAIL 1

DETAIL LEGEND:

1. FX LUMINAIRE "A-BR10" FIXTURE PER PLAN
2. INSTALL RING
3. INSTALL SPACER
4. ANCHOR BOLTS
5. CONCRETE BASE
6. ADJACENT GROUND OR PAVEMENT SURFACE PER PLAN

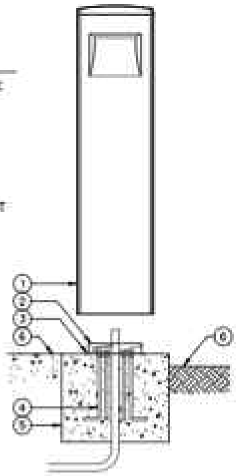
NOTES

A. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

B. INPUT VOLTAGE: 110–277V

C. SEE PLAN LEGEND FOR LED BOARD OPTION, BEAM SPREADS, AND ACCESSORIES.

D. ALWAYS REFER TO FX PRODUCT INSTALLATION NOTES PRIOR TO INSTALLATION.



1 PATH LIGHT (A-BR10)

FXLuminaire

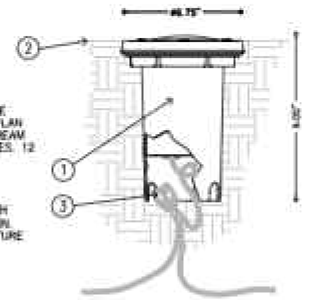
NOT TO SCALE

DETAIL 2

INSTALL THE FX LUMINAIRE RESISTENTE PILOTARE IN WELL DRAINED TURF OR GRAVEL AREAS. DO NOT INSTALL IN LOCATIONS THAT ARE SUBJECT TO STANDING WATER AS THIS IS NOT AN UNDERWATER LIGHT.

USE THE "REUSABLE CONSTRUCTION COVER" TO KEEP SLEEVE CLEAN AND FREE OF DEBRIS.

1. FX LUMINAIRE RESISTENTE PILOTARE FIXTURE SEE PLAN LEGEND FOR WATTAGE, BEAM SPREAD AND ACCESSORIES. 12 VOLTS, 20 WATT MAX
2. FINISHED GRADE
3. LOW VOLTAGE CABLE WITH LITESPLICE, LEAVE 18" MIN. LOOP COILED BELOW FIXTURE FOR SERVICE

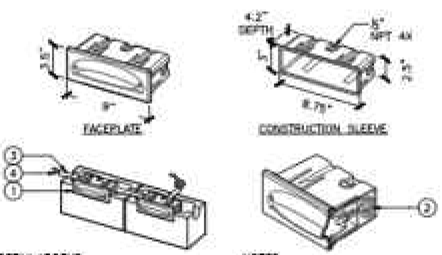


SECTION/ELEVATION

2 RESISTENTE PILOTARE(RP) GRADE MOUNT

NOT TO SCALE — FX LUMINAIRE DETAIL

DETAIL 3



DETAIL LEGEND:

1. FX LUMINAIRE "PD" FIXTURE PER PLAN
2. DIRECT BURY UF/UL, COPPER, LOW VOLTAGE CABLE W/ UL 486D (IEC/EN 60998) RATED WATERPROOF CONNECTION. LEAVE 8" MINIMUM WIRE LOOP COILED IN CONSTRUCTION SLEEVE FOR FUTURE SERVICE.
3. ELECTRICAL CONDUIT PER LOCAL CODE
4. 12 GA MAIN LINE CABLE

NOTES

A. FIXTURE REQUIRES 10–15V AC/DC

B. INSTALL TO A UL 1838 (IEC/EN 61437) LISTED TRANSFORMER

C. IF WALL IS STUCCOED OR COATED, USE THE "CONSTRUCTION COVER" TO KEEP CAVITY CLEAN & CLEAR OF DEBRIS.

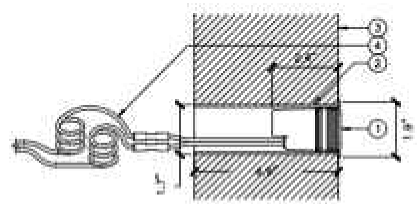
D. THIS FIXTURE IS DESIGNED FOR DOWN LIGHTING ONLY. DO NOT USE IN UP LIGHT POSITION.

3 LED WALL LIGHT (PD) CONCRETE WALL MOUNT

FXLuminaire

NOT TO SCALE

DETAIL 4



DETAIL LEGEND:

1. FX LUMINAIRE "VO" FIXTURE PER PLAN.
2. PROVIDED CONDUIT SLEEVE. TRIM LENGTH IF NECESSARY.
3. WALL PER PLAN. FRONT SIDE OF WALL.
4. DIRECT BURY, UF/UL, COPPER, LOW VOLTAGE CABLE WITH UL 486D (IEC/EN 60998) RATED WATERPROOF CONNECTION. LEAVE MINIMUM WIRE LOOP COILED BEHIND FIXTURE FOR FUTURE SERVICE.

NOTES

A. FIXTURE REQUIRES 10–15V AC/DC

B. INSTALL TO A UL 1838 (IEC/EN 61347) LISTED TRANSFORMER

4 WALL LIGHT (VO)

FXLuminaire

NOT TO SCALE

Design Two Four/Two Six

TOLT VILLAS

CARNATION, WA 98014

TOLT VILLAS, LLC.
PO BOX 922
WOODINVILLE, WA 98072

LIGHTING SCHEDULE & DETAILS

LP-2

FX Luminaire

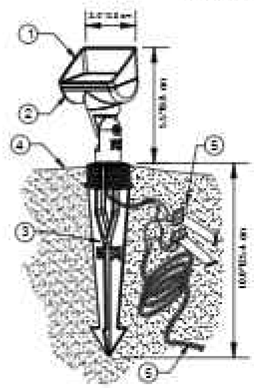
FX LUMINAIRE
1940 Diamond Street
San Marcos, CA 92078
Main: 760-744-5240
Technical Support:
760-591-7383
www.fxl.com

DETAIL LEGEND

1. FX Luminaire PB fixture. See plan legend for wattage, beam spread and accessories.
2. Aim fixture a minimum of 10° off vertical to allow water and dirt to drain off lens cap.
3. FX Luminaire Long Slot Spike mount.
4. Finished grade.
5. Direct bury, UF/UL, copper, low voltage cable with 3M DBR/Y-6 direct bury splice kit. Leave 18" minimum wire loop coiled below fixture for service.

NOTES

A. Installation to be completed in accordance with manufacturer's specifications.
B. Accepts 10–15 volts – AC or DC.
C. See plan legend for LED board option, beam spreads, and accessories.
D. Always refer to FX product installation notes prior to installation.



1 PB UP LIGHT LONG SLOT SPIKE

NOT TO SCALE — P-CO-73

FX Luminaire

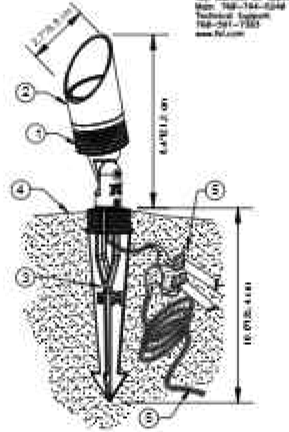
FX LUMINAIRE
1940 Diamond Street
San Marcos, CA 92078
Main: 760-744-5240
Technical Support:
760-591-7383
www.fxl.com

DETAIL LEGEND

1. FX Luminaire NP fixture. See plan legend for wattage, beam spread and accessories.
2. Aim fixture a minimum of 10° off vertical to allow water and dirt to drain off lens cap.
3. FX Luminaire Long Slot Spike mount.
4. Finished grade.
5. Direct bury, UF/UL, copper, low voltage cable with 3M DBR/Y-6 direct bury splice kit. Leave 18" minimum wire loop coiled below fixture for service.

NOTES

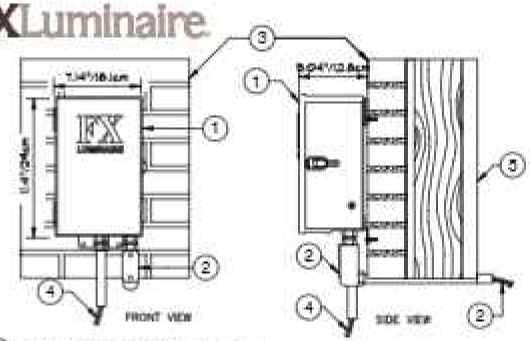
A. Installation to be completed in accordance with manufacturer's specifications.
B. Accepts 10–15 volts – AC or DC.
C. See plan legend for LED board option, beam spreads, and accessories.
D. Always refer to FX product installation notes prior to installation.



2 NP UP LIGHT LONG SLOT SPIKE

NOT TO SCALE — P-CO-66

FX Luminaire



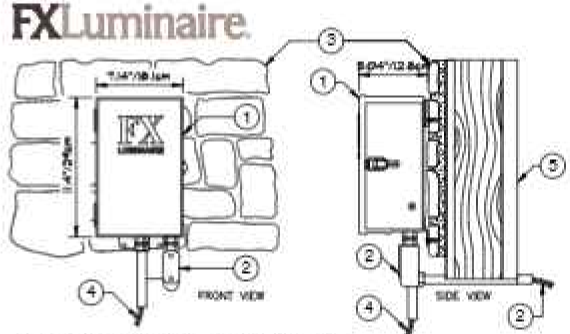
1. FX LUMINAIRE LX TRANSFORMER. SEE PLAN LEGEND FOR MOUNTING INSTRUCTIONS.
2. FX AVAILABLE ELECTRIC HARDWARE TO 120 VOLT POWER SOURCE.
3. OUTDOOR BRICK MOUNTING SURFACE.
4. LENGTH OF WIRE AND JUNCTION BOX TO BE DETERMINED. USE DIRECT BURY, UF/UL, COPPER, LOW VOLTAGE CABLE WITH 3M DBR/Y-6 DIRECT BURY SPLICE KIT.
5. SEE PLAN LEGEND FOR TYPE OF MATERIAL FOR INSIDE WALL SURFACE.

NOTES:
A. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
B. ALWAYS REFER TO FX PRODUCT INSTALLATION NOTES PRIOR TO INSTALLATION.
C. THIS DETAIL SHOWS DIMENSIONS FOR BOTH THE LX-150 AND LX-300

3 LX-TRANSFORMER OUTDOOR BRICK

NTS — P-CO-37

FX Luminaire



1. FX LUMINAIRE LX TRANSFORMER. SEE PLAN LEGEND FOR MOUNTING INSTRUCTIONS.
2. FX AVAILABLE ELECTRIC HARDWARE TO 120 VOLT POWER SOURCE.
3. OUTDOOR FAUX STONE MOUNTING SURFACE.
4. LENGTH OF WIRE AND JUNCTION BOX TO BE DETERMINED. USE DIRECT BURY, UF/UL, COPPER, LOW VOLTAGE CABLE WITH 3M DBR/Y-6 DIRECT BURY SPLICE KIT.
5. SEE PLAN LEGEND FOR TYPE OF MATERIAL FOR INSIDE WALL SURFACE.

NOTES:
A. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
B. ALWAYS REFER TO FX PRODUCT INSTALLATION NOTES PRIOR TO INSTALLATION.
C. THIS DETAIL SHOWS DIMENSIONS FOR BOTH THE LX-150 AND LX-300

4 LX-TRANSFORMER OUTDOOR FAUX

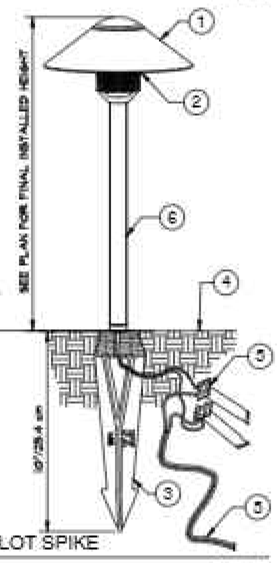
NTS — P-CO-35

FX Luminaire

DETAIL LEGEND

1. FX LUMINAIRE CA FIXTURE. SEE PLAN LEGEND FOR WATTAGE, BEAM SPREAD AND ACCESSORIES.
2. TWIST TOP ASSEMBLY CLOCKWISE ONTO RISER UNTIL THE GAP BETWEEN THE LENSE AND BRASS REDUCER IS COMPLETELY SEALED.
3. FX LUMINAIRE LONG SLOT SPIKE MOUNT.
4. FINISHED GRADE.
5. DIRECT BURY, UF/UL, COPPER, LOW VOLTAGE CABLE WITH 3M DBR/Y-6 DIRECT BURY SPLICE KIT. LEAVE 18" MINIMUM WIRE LOOP COILED BELOW FIXTURE FOR SERVICE.
6. CRA MOUNT, SEE PLAN FOR HEIGHT.

NOTES:
A. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
B. ACCEPTS 10–15 VOLTS – AC OR DC
C. SEE PLAN LEGEND FOR LED BOARD AND ACCESSORIES.
D. ALWAYS REFER TO FX PRODUCT INSTALLATION NOTES PRIOR TO INSTALLATION.



5 CA PATH LIGHT LONG SLOT SPIKE

NTS — P-CO-85

Design Two Four/Two Six

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CARNATION, WA 98014

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Design Team

JA
JA
JA

09/15/2021

Revisions

Key Plan

Signature

Sheet Title

LIGHTING DETAILS

Sheet No.

LP-3