ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS ARE REPRESENTED IN THIS PLAN SET.

AC	ASPHALT CONCRETE	N.T.S.	NOT TO SCALE
BCP	BEGIN CURB RETURN	PC	POINT OF CURVATURE
BM	BENCH MARK	PI	POINT OF INTERSECTION
BO	BLOWOFF ASSEMBLY	PL	PROPERTY LINE
BVC	BEGIN VERTICAL CURVE	POB	POINT OF BEGINNING
BW	BOTTOM OF WALL	POC	POINT OF CONNECTION
CB	CATCH BASIN	PRC	POINT OF REVERSE CURVATURE
CIP	CAST IRON PIPE		
CL	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PVC	POLY-VINYL CHLORIDE
CO	CLEANOUT	R	RADIUS
CATV	CABLE TELEVISION	RCP	REINFORCED CONCRETE PIPE
°	DEGREE	R/W	RIGHT OF WAY
ø	DIAMETER	RD	ROOF DRAIN
D.I.	DUCTILE IRON	SS	SANITARY SEWER
EE	ELECTRICAL	SSMH	SANITARY SEWER MANHOLE
ECR	END HURB RETURN	SD	STORM SEWER
ELEV	ELEVATION	SDMH	STORM DRAIN MANHOLE
EP	EDGE OF PAVEMENT	STA	STATION
EVC	END VERTICAL CURVE	STEP	SEPTIC TANK EFFLUENT PUMP
EX	EXISTING	DTL.	STANDARD DETAIL
FF	FINISHED FLOOR	T	TELEPHONE
FG	FINISHED GRADE	TB	THRUST BLOCK
FH	FIRE HYDRANT	TBC	TOP BACK OF CURB
FL	FLOWLINE/FLANGE	TC	TOP OF CURB
FM	FORCE MAIN	TC	TOP OF CONCRETE
G	GAS	TG	TOP OF GRATE
GL	GUTTER LINE	TW	TOP OF WALL
GM	GAS METER	TYP.	TYPICAL
GB	GRADE BREAK	UGP	UNDERGROUND POWER
HDPE	HIGH DENSITY POLYETHYLENE	VS	VACUUM SEWER MAIN
HP	HIGH POINT	W	WATER
IP	INSPECTION PORT	WM	WATER METER
L	LENGTH	WV	WATER VALVE
LF	LINEAL FEET	±	APPROXIMATELY
MH	MANHOLE	%	PERCENT
MJ	MECHANICAL JOINT		

LINETYPES

NOTE: NOT ALL LINETYPES ARE REPRESENTED IN THIS PLAN SET.

EXISTING	PROPOSED	
SD	SD	STORM MAIN
RD	RD	ROOF DRAIN
	X	SILT FENCING
		CLEARING LIMITS
		SWALE/DITCH CENTERLINE
W	W	WATER MAIN
SS	SS	SANITARY SEWER MAIN
	STEP	STEP MAIN
FM	FM	FORCE MAIN
G	G	GAS LINE
P	P	POWER LINE
		CONDUIT
T	T	TELEPHONE LINE
TV	CATV	CABLE TV LINE
		TOP/TOE OF SLOPE
		BUILDING ENVELOPE/SETBACK
	GB GB GB	GRADE BREAK
XXX	XXX	CONTOUR LINE
		FENCE
		ROADWAY CENTERLINE
		RIGHT-OF-WAY LINE
		EASEMENT LINE
		FRONT/BACK OF CURB
EDGE OF PAVEMENT		EDGE OF PAVEMENT
EDGE OF GRAVEL SHOULDER		EDGE OF GRAVEL SHOULDER
		SAWCUT LINE
F	F	FIBER OPTIC LINE

NOTE:
IT IS THE APPLICANT'S/OWNER'S SOLE RESPONSIBILITY TO ENSURE IMPLEMENTATION OF THIS PROJECT IS IN FULL COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT REGULATIONS. THE APPLICANT SHOULD CONTACT U.S. FISH AND WILDLIFE STAFF FOR QUESTIONS REGARDING ESA COMPLIANCE.

GENDLEK SHORT PLAT

PORTION OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.
TUMWATER, WASHINGTON

SYMBOLS

NOTE: NOT ALL SYMBOLS ARE REPRESENTED IN THIS PLAN SET.

EXISTING	PROPOSED	
BO	BO	BLOWOFF ASSEMBLY
	FH	FIRE HYDRANT
W		GATE VALVE
		AIR RELIEF VALVE
		REDUCER
		THRUST BLOCKING
W		WATER METER BOX
WELL	WELL	WELL
		GUARD POST (BOLLARD)
		DOUBLE CHECK VALVE ASSEMBLY
		CAP/PLUG
	CB	STORM DRAIN CATCH BASIN
D	SDMH	STORM DRAIN MANHOLE
CO	CO	CLEANOUT
	IP	INSPECTION PORT
	#x	SOIL TEST PIT
	X.X%	SURFACE FLOW DIRECTION
		SLOPE
		RIPRAP
X418.85	XXX.X	SPOT ELEVATION
S	SSMH	SEWER MANHOLE
CO	CO	SEWER CLEANOUT
		AIR RELEASE VALVE
		THRUST BLOCKING
		REDUCER
		CAP/PLUG
		PIG PORT
		STEP METER BOX
		GATE VALVE
		TERMINUS PIG LAUNCH PORT
J		JUNCTION BOX
SIG		SERVICE DISCONNECT
		YARD/PEDESTRIAN LIGHT
		STREET LIGHT
		TRANSFORMER
P	P	POWER VAULT
P		POWER POLE
		POLE ANCHOR
	T	TELEPHONE VAULT
T	T	TELEPHONE RISER
		GAS VALVE
G		GAS METER
		BUSH/SHRUB
		TREE (CONIFER)
		TREE (DECIDUOUS)
		SIGN
		BARRICADE

CONTRACTOR AS-BUILTS

OLYMPIC ENGINEERING IS REQUIRED BY THE CITY TO PROVIDE RECORD DRAWINGS (AS-BUILTS) AND FINAL CERTIFICATION PRIOR TO FINAL CITY ACCEPTANCE. **OLYMPIC ENGINEERING WILL NOT PREPARE THE RECORD DRAWINGS OR PROVIDE THE CERTIFICATION UNLESS WE HAVE INSPECTED ACTUAL INSTALLATION OF ALL OF THE IMPROVEMENTS DEPICTED HEREIN. ADDITIONALLY, OLYMPIC ENGINEERING ASSUMES NO LIABILITY IN THE PERFORMANCE OF THE IMPROVEMENTS IF WE HAVE NOT INSPECTED INSTALLATION OF THE IMPROVEMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY OLYMPIC ENGINEERING A MINIMUM OF 72-HOURS TO SCHEDULE INSPECTIONS.**

CONTRACTOR SHALL MAINTAIN ONE SET OF THE CONTRACT DRAWINGS THAT SHALL INCLUDE, CLEARLY AND LEGIBLY MARKED, ANY ALTERATIONS OR LOCATIONS OF UNDERGROUND UTILITIES ENCOUNTERED DURING PROGRESS OF THIS PROJECT, AND ANY ALTERATIONS MADE TO THE IMPROVEMENTS BEING INSTALLED. SAID DRAWINGS SHALL BE MARKED "AS-BUILT" AND SHALL BE SUBMITTED TO OLYMPIC ENGINEERING UPON PROJECT COMPLETION.

TRAFFIC CONTROL NOTE

CONTRACTOR SHALL PREPARE AND PROVIDE A TRAFFIC CONTROL PLAN TO THE CITY INSPECTOR FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION START.

DEWATERING

FOUNDATIONS, UTILITY TRENCHES, AND ALL OTHER PARTS OF THE CONSTRUCTION SITE SHALL BE DEWATERED AND KEPT FREE OF STANDING WATER AND MUDDY CONDITIONS AS NECESSARY FOR THE PROPER EXECUTION OF THE WORK. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL DRAINS, SUMPS, PUMPS, AND ALL OTHER EQUIPMENT REQUIRED TO PROPERLY DEWATER THE SITE AS SPECIFIED. DEWATERING SYSTEMS THAT CAUSE A LOSS OF SOIL FINES FROM FOUNDATION AREAS WILL NOT BE PERMITTED.

GEOTECHNICAL NOTE

ALL GRADING, SITE PREPARATION, STRUCTURAL FILL, ETC. SHALL MEET WSDOT, IBC, AND CITY BUILDING CODE STANDARDS. INSPECTIONS/EVALUATIONS OF PAVEMENT SUBGRADES, PLACEMENT OF FILL, GENERAL SITE GRADING, ETC. BY A GEOTECHNICAL ENGINEER ARE REQUIRED.

GENERAL NOTES

THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH ADJACENT PROPERTY OWNERS. DRIVEWAYS AND UTILITY SERVICES TO REMAIN ACCESSIBLE AT ALL TIMES.

ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL "PRE-CONSTRUCTION" STATE OR BETTER.

CONTRACTOR SHALL EXPOSE CONNECTION POINTS AND VERIFY FITTINGS 48-HOURS PRIOR TO DISTRIBUTING SHUT-DOWN NOTICES.

THE CONTRACTOR SHALL REPLACE ANY STRIPING ALONG 70TH AVE. THAT IS DAMAGED AS A RESULT OF THIS PROJECT'S CONSTRUCTION ACTIVITIES.

REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIALS

WHENEVER IN EXCAVATING THE SITE EXPOSES PEAT, SOFT CLAY, QUICKSAND, OR OTHER UNSUITABLE FOUNDATION MATERIAL, SUCH MATERIAL SHALL BE REMOVED TO THE DEPTH DIRECTED BY THE GEOTECHNICAL ENGINEER AND BACKFILLED WITH SUITABLE FOUNDATION MATERIAL.

UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND HAULED TO A WASTE SITE OBTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH AND PLACE SUITABLE MATERIAL MEETING THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE IBC, CURRENT EDITIONS, AT THE DIRECTION OF A GEOTECHNICAL ENGINEER.

MEASUREMENT AND PAYMENT SHALL BE MADE BY PER TON OF MATERIAL EXCAVATED.

PROJECT SPECIFICATIONS

THE WORK ON THIS PROJECT SHALL BE ACCOMPLISHED IN ACCORDANCE WITH CITY OF TUMWATER (CITY) STANDARDS AND THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, 2018, INCLUDING ANY AMENDMENTS, AS ISSUED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) (HEREAFTER "STANDARD SPECIFICATIONS").

ALSO INCORPORATED INTO THESE CONTRACT DOCUMENTS BY REFERENCE ARE:

A) CITY OF TUMWATER DEVELOPMENT GUIDE, CURRENT EDITION;
B) CITY OF TUMWATER DRAINAGE DESIGN AND EROSION CONTROL MANUAL (DDECM), 2018 EDITION;
C) INTERNATIONAL BUILDING CODE (IBC) AND INTERNATIONAL RESIDENTIAL CODE (IRC) WITH ANY CITY OF TUMWATER AMENDMENTS, 2015 EDITIONS;
D) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD), 2009 EDITION, WITH WSDOT MODIFICATIONS, IF ANY;
E) INTERNATIONAL FIRE CODE, 2015 EDITION;
F) UNIFORM PLUMBING CODE, 2015 EDITION;

CONTRACTOR SHALL OBTAIN COPIES OF THESE PUBLICATIONS AT CONTRACTOR'S OWN EXPENSE.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION, SUPPLIES, AND INCIDENTALS REQUIRED TO COMPLETE ALL WORK SHOWN ON THESE DRAWINGS AND TO OBTAIN ACCEPTANCE BY THE CITY, DESIGN ENGINEER, AND THE PROJECT OWNER.

THE INTENT OF THESE DRAWINGS IS TO PRESCRIBE A COMPLETE WORK. OMISSIONS FROM THE DRAWINGS OF DETAIL OF WORK WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE OMITTED WORK.

ANY PROPOSED ALTERATIONS BY THE CONTRACTOR AFFECTING THE REQUIREMENTS AND INFORMATION IN THESE DRAWINGS SHALL BE IN WRITING AND WILL REQUIRE APPROVAL OF THE DESIGN ENGINEER, PROJECT OWNER, AND CITY.

UTILITIES LOCATE NOTE

THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON INFORMATION PROVIDED BY THE SURVEYOR AND FROM CITY RECORDS. OLYMPIC ENGINEERING ASSUMES NO RESPONSIBILITY FOR THE EXACT LOCATION OF EXISTING UTILITIES SHOWN OR NOT SHOWN HEREON. CONTRACTOR SHALL VERIFY THE EXACT SIZE, DEPTH, AND LOCATION OF EXISTING UTILITIES AND CALL FOR UNDERGROUND LOCATE AT 1-800-424-5555 OR 811 A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION START. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES RESULTING FROM FAILURE TO LOCATE EXISTING UTILITIES.

CONTRACTOR LIABILITY NOTE

CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD OLYMPIC ENGINEERING HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF OLYMPIC ENGINEERING.

SURVEY INFORMATION

VERTICAL DATUM
THURSTON COUNTY CONTROL POINT NO. 1299, ELEV.=195.56' NGVD 29.

BASIS OF BEARING
THURSTON COUNTY HIGH PRECISION NETWORK BASED ON THRUSTON COUNTY CONTROL POINT NO'S 1299 AND 566A = SOUTH 39° 36' 03" WEST.

LEGAL DESCRIPTION
PARCEL "A" OF BOUNDARY LINE ADJUSTMENT NO. BLA-1247 AS RECORDED AUGUST 14, 1992 UNDER AUDITOR'S FILE NO. 9208140328, RECORDS OF THRUSTON COUNTY, WASHINGTON.

THE TOPOGRAPHIC, BOUNDARY, AND UTILITY INFORMATION DEPICTED HEREON, ALONG WITH THE INFORMATION ABOVE, WAS PROVIDED BY A-LINE LAND SURVEYING, LLC, AND WAS OBTAINED FROM CITY RECORDS. THIS INFORMATION WAS NOT VERIFIED BY OLYMPIC ENGINEERING AND OLYMPIC ENGINEERING ASSUMES NO LIABILITY IN THE ACCURACY OF THIS INFORMATION OR FOR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

UTILITY TRENCHING AND INSTALLATION

CONTRACTOR SHALL PROVIDE TRENCHING, CONDUIT/SLEEVING, AND BACKFILL AS NEEDED FOR POWER, IRRIGATION, COMMUNICATIONS, LIGHTING, GAS, AND ALL OTHER UTILITIES NEEDED FOR THIS PROJECT. COORDINATE INSTALLATION AND LOCATIONS WITH OWNER AND RESPECTIVE UTILITY COMPANY.

WORK IN CITY RIGHT-OF-WAY

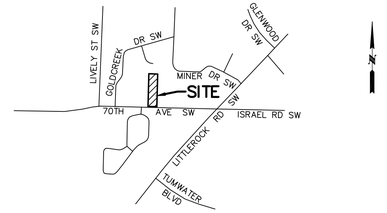
CONTRACTOR TO OBTAIN RIGHT-OF-WAY PERMIT PRIOR TO ANY WORK WITHIN CITY RIGHT-OF-WAY. ALL WORK WITHIN CITY RIGHT-OF-WAY SHALL ADHERE TO CITY STANDARDS AS OUTLINED IN THE RIGHT-OF-WAY PERMIT.

SURVEY MONUMENT NOTE

A REGISTERED PROFESSIONAL LAND SURVEYOR SHALL OBTAIN A PERMIT FROM THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES PRIOR TO REMOVING OR DISTURBING ANY SURVEY MONUMENTS.

VICINITY MAP

N.T.S.



PROJECT INFORMATION

OWNER/APPLICANT:	DONALD & CHRISTINE GENDLEK 3223 DONNELLY DR. SE OLYMPIA, WA 98501
PARCEL NO:	12704420400
SITE ADDRESS:	2518 70TH AVE. SW TUMWATER, WA 98512
ZONING:	SFM
WATER/SEWER:	CITY OF TUMWATER
TELECOMMUNICATIONS:	COMCAST & CENTURYLINK
POWER/GAS:	PUGET SOUND ENERGY
FIRE DISTRICT:	TUMWATER
REFUSE/RECYCLING:	PACIFIC DISPOSAL
SOIL TYPE:	INDIANOLA LOAMY SAND (HSG A) & NISQUALLY LOAMY FINE SAND (HSG A) PER NRCS

LOT ADDRESSES

LOT 1	6932 LIBERTY LN. SW, TUMWATER, WA 98512
LOT 2	6924 LIBERTY LN. SW, TUMWATER, WA 98512
LOT 3	6920 LIBERTY LN. SW, TUMWATER, WA 98512
LOT 4	6916 LIBERTY LN. SW, TUMWATER, WA 98512
LOT 5	6912 LIBERTY LN. SW, TUMWATER, WA 98512
LOT 6	6908 LIBERTY LN. SW, TUMWATER, WA 98512
LOT 7	6904 LIBERTY LN. SW, TUMWATER, WA 98512

SHEET INDEX

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:22:08 PM
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

TUM-18-1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT — CITY OF TUMWATER WA

CIVIL COVER SHEET

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/26/19

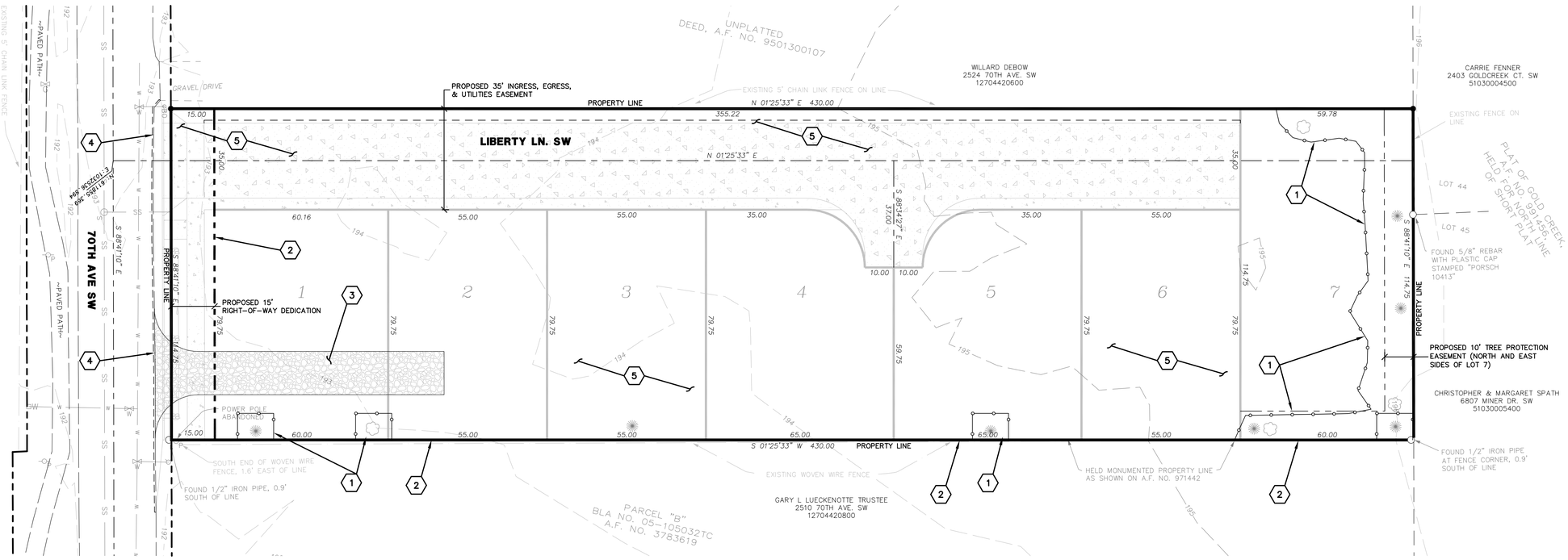
6/26/19
CHRISTOPHER M. MEEK — STATE OF WASHINGTON — 37401 — REGISTERED PROFESSIONAL ENGINEER

PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
OLYMPIC ENGINEERING
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_COVR

C0.1
SHEET: 1 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.



VERTICAL DATUM
NGVD 29

BASIS OF VERTICAL DATUM:
THURSTON COUNTY CONTROL POINT NO. 1299, ELEV.=195.56' NGVD 29.

SCALE: 1"=20 FEET
0 10 20 40

BASIS OF MERIDIAN:
THURSTON COUNTY HIGH PRECISION NETWORK BASED ON THRUSTON COUNTY CONTROL POINT NO'S 1299 AND 566A = SOUTH 39° 36' 03" WEST.

GENERAL NOTES

1. THE CONTRACTOR SHALL MINIMIZE CLEARING AND GRADING, MAINTAIN THE BMP'S UNTIL FINAL SITE STABILIZATION, AND INCORPORATE ANY ADDITIONAL BMP'S AS NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION. SEE VOLUMES II AND V OF THE CITY OF TUMWATER DRAINAGE AND EROSION CONTROL MANUAL FOR ADDITIONAL BMP'S.
2. ALL DISTURBED AREAS NOT BEING COVERED WITH A HARD SURFACE SHALL CONTAIN SOILS MEETING THE POST-CONSTRUCTION SOIL QUALITY AND DEPTH (BMP T5.13) REQUIREMENTS.
3. SEE SHEET C1.2 FOR ADDITIONAL EROSION CONTROL NOTES.
4. **ANY PERMEABLE PAVEMENT SUBGRADE AREAS COMPACTED DURING SITE WORK SHALL BE SCRARIFIED TO A MINIMUM 6" DEPTH PRIOR TO PLACEMENT OF THE BASE COURSE UNDER THE OBSERVANCE OF THE GEOTECHNICAL ENGINEER.**
5. **CONTRACTOR SHALL ENSURE SEDIMENT IS NOT TRACKED ONTO THE PERMEABLE PAVEMENT AND THAT IT IS PROTECTED FROM ANY SEDIMENTATION UNTIL THE SITE IMPROVEMENTS, INCLUDING FUTURE LOT DEVELOPMENT AND LANDSCAPING, HAVE BEEN COMPLETED.**
6. SEE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION.

CONSTRUCTION NOTES

1. **INSTALL TREE PROTECTION FENCING PER DETAIL ON SHEET C1.2. SEE TREE REPORT PREPARED BY PROFESSIONAL FORESTRY SERVICES, INC., DATED JULY 9, 2019, FOR REFERENCE.**
2. **INSTALL TEMPORARY SILT FENCING (BMP C233) AROUND PROJECT PERIMETER AS NEEDED TO CONTAIN ANY SEDIMENT RUNOFF PER DETAIL ON SHEET C1.2. MAINTAIN THROUGH FINAL SITE STABILIZATION.**
3. **CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE (BMP C105) PER DETAIL ON SHEET C1.2.**
4. **SAWCUT, REMOVE, AND DISPOSE OF EXISTING ASPHALT AS NEEDED TO PROVIDE A NEAT/CLEAN EDGE FOR NEW ROADWAY WIDENING.**
5. **CLEAR, GRUB AND GRADE PROJECT AREA AS NEEDED TO CONSTRUCT THE NEW IMPROVEMENTS AND PER OWNER. GRADING OF THE FUTURE LOT AREAS SHALL MEET IBC REQUIREMENTS.**

CITY OF TUMWATER

APPROVED

PERMIT #: TUM-19-0854

08/26/20192:22:28 PM

Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM-18-1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT

CITY OF TUMWATER WA

TEMPORARY EROSION CONTROL AND DEMOLITION PLAN

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: 1" = 20'
DATE: 6/28/19

6/28/19
CHRISTOPHER M. SPATH
STATE OF WASHINGTON
37401
REGISTERED PROFESSIONAL ENGINEER

PO Box 12690
Olympia, WA 98508
360.705.3474
www.olyeng.com
OLYMPIC ENGINEERING
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_TESC

C1.1
SHEET: 2 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.

POST–CONSTRUCTION SOIL QUALITY AND DEPTH (BMP LID.02) GUIDELINES

See "Guidelines and Resources for Implementing Soil Quality and Depth BMP T5.13 in WDOE Stormwater Management Manual for Western Washington". This document is available at no charge from the following web sites: <www.SoilsforSalmon.org> and <www.BuildingSoil.org>. Also see "Soil Amendment Section" detail this sheet for reference.

Soil Retention

The duff layer and native topsoil should be retained in an undisturbed state to the maximum extent practicable. In any areas requiring grading remove and stockpile the duff layer and topsoil on site in a designated, controlled area, not adjacent to public resources and critical areas, to be reapplied to other portions of the site where feasible.

Soil Quality

All areas subject to clearing and grading that have not been covered by impervious surface, incorporated into a drainage facility or engineered as structural fill or slope shall, at project completion, demonstrate the following:

- Turf areas: An amended soil layer with an organic matter content, as measured by the loss–on–ignition test, of a minimum 4 percent (target 5 percent) organic matter content.
- Planting Beds: An amended soil layer with an organic content, as measured by the loss–on–ignition test, of a minimum 8 percent (target 10 percent) dry weight. 2 inches of organic mulch placed over the amended soil layer.
- Subsoils below the amended soil layer scarified at least 4 inches with some incorporation of the upper material to avoid stratified layers.
- The soil shall have pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil.
- A minimum settled depth of 8 inches (9.5 inch loose depth).
- The resulting soil should be conducive to the type of vegetation to be established.

Materials

Quality requirements for compost and other materials include the following:

- The organic content for "pre–approved" amendment rates can be met only using compost that meets the definition of "composted materials" in WAC 173–350–220. This code is available online at: http://app.leg.wa.gov/WAC/default.aspx?cite=173–350–220.
- The compost must also have an organic matter content of 35 percent to 65 percent, and a carbon to nitrogen ratio below 25:1.
- The carbon to nitrogen ratio may be as high as 35:1 for plantings composed entirely of plants native to the Puget Sound Lowlands region.
- Calculated amendment rates may be met through use of composted materials as defined above; or other organic materials amended to meet the carbon to nitrogen ratio requirements; "pre–approved" amendment rates can only be met using compost meeting the compost specification for bioretention (see Section 2.2.5 of the DDECM), with the exception that the compost may have up to 35 percent biosolids or manure.

Implementation Options

The soil quality design guidelines listed above can be met by using one of the methods listed below which are described in detail in the Soils for Salmon guidance document (see Design Guidelines above):

Option 1. Leave undisturbed native vegetation and soil, and protect from compaction during construction. Identify areas of the site that will not be stripped, logged, graded or driven on, and fence these areas to prevent impacts during construction (see BMPs C101, C100, and C103 in Volume II). If neither soils nor vegetation are disturbed, these areas do not require amendment.

Option 2. Amend existing site topsoil or subsoil in place at default "preapproved" rates, or at custom calculated rates based on tests of the soil and amendment. Scarify or till the subgrade to a depth of 8 inches (or depth needed to achieve a total depth of 12 inches of uncompacted soil after calculated amount of amendments are added). Amend soil to meet required organic content dependent on the use and whether the pre–approved or calculated rate method is used.

Pre–Approved Rates:

Planting Beds
- Place 3 inches of compost and rototill into 5 inches of soil (a total amended depth of about 9.5 inches, for a settled depth of 8 inches).

Turf Areas
- Place 1.75 inches of compost and rototill into 6.25 inches of soil (a total amended depth of about 9.5 inches for a settled depth of 8 inches)

Option 3. Stockpile existing topsoil during grading, and replace it prior to planting. Stockpiled topsoil must also be amended if needed to meet the organic matter or depth requirements, either at a default "pre–approved" rate or at a custom calculated rate. If placed topsoil plus compost or other organic material will amount to less than 12 inches, then the subgrade will be scarified or tilled to achieve 12 inches of loosened soil after amendment. Replace stockpiled topsoil prior to planting. Amend stockpiled topsoil if needed to meet required organic content dependent on the use (Planting area or Turf) and whether the preapproved or calculated rate method is used.

Pre–Approved Rates:

Planting Beds
- Place 3 inches of compost and rototill into 5 inches of soil (a total amended depth of about 9.5 inches, for a settled depth of 8 inches).

Turf Areas
- Place 1.75 inches of compost and rototill into 6.25 inches of soil (a total amended depth of about 9.5 inches for a settled depth of 8 inches)

Option 4. Import topsoil mix of sufficient organic content and depth to meet the requirements. Scarify or till subgrade in two directions to 6 inches depth. Imported soils should not contain excessive clay or silt fines (more than 5 percent passing the US #200 sieve) because that could restrict stormwater infiltration. Use topsoil mix suitable for proposed use (planting bed or turf area). Place topsoil in layers per recommendations of Soils for Salmon guidance documents (see Design Guidelines above).

Pre–Approved Rates:

Planting Beds
- Use imported topsoil mix containing 10% organic matter (typically around 40% compost). Soil portion must be sand or sandy loam as defined by the USDA.
- Place 3 inches of imported topsoil mix on surface and till into 2 inches of soil.
- Place 3 inches of imported topsoil mix on surface and till into 2 inches of soil.
- Place second lift of 3 inches topsoil mix on surface.
- Rake beds to smooth, and remove surface rocks over 2 inches diameter.
- Mulch planting beds with 2 inches of organic mulch.

Turf Areas
- Use imported topsoil mix containing 5% organic matter (typically around 25% compost). Soil portion must be sand or sandy loam as defined by the USDA.
- Place 3 inches of imported topsoil mix on surface and till into 2 inches of soil
- Place second lift of 3 inches topsoil mix on surface.
- Water or roll to compact soil to 85% of maximum.
- Rake to level, and remove surface rocks larger than 1 inch diameter.

More than one method may be used on different portions of the same site. Soil that already meets the depth and organic matter quality standards, and is not compacted, does not need to be amended. See the Soils for Salmon (2009) website for further discussion of implementation and for pre–approved rates of soil amendment.

Construction and Maintenance

See the Soils for Salmon website and the guidance provided in the most current edition of "Guidelines and Resources for Implementing Soil Quality and Depth BMP T5.13 in the WDOE Stormwater Management Manual for Western Washington" (available at www.buildingsoil.org) for details on implementing the Post–Construction Soil Quality and Depth BMP.

Maintenance

- Soil quality and depth should be established near the end of construction and, once established, protected from compaction (e.g., by large machinery use) and from erosion.
- Soil should be planted and mulched immediately after installation.
- Plant debris or its equivalent should be left on the soil surface to replenish organic matter.
- Reduce irrigation and the application of fertilizers, herbicides and pesticides.

STANDARD BMP NOTES

Construction Entrance Notes
1. Material shall be 4" to 6" quarry spalls.
2. The rock pad shall be at least 12 inches thick and 100 feet long. Width shall be the full width of the vehicle ingress and egress area. Smaller pads may be approved for single–family residential and small commercial sites.
3. Additional rock shall be added periodically to maintain proper function of the pad.
4. If the pad does not adequately remove the mud from the vehicle wheels, the wheels shall be hosed off before the vehicle enters a paved street. The washing shall be done on an area covered with crushed rock and wash water shall drain to a sediment retention facility or through silt fence.

Silt Fence Notes
1. Filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6–inch overlap, and securely fastened at both ends to post.
2. Posts shall be spaced a maximum of 6 feet apart and driven securely into the ground (minimum of 30 inches).
3. A trench shall be excavated approximately 8 inches wide and 12 inches deep along the line of posts and upslope from the barrier.
4. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy–duty wire staples at least 1 inch long, tie wires or hog rings. The wire shall extend into the trench a minimum of 4 inches and shall not extend more than 36 inches above the original ground surface.
5. The standard strength filter fabric shall be stapled or wired to the fence, and 20 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
6. When extra–strength filter fabric and closer post spacing is used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of above notes applying.
7. Filter fabric fences shall not be removed before the upslope area has been permanently stabilized.
8. Filter fabric fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

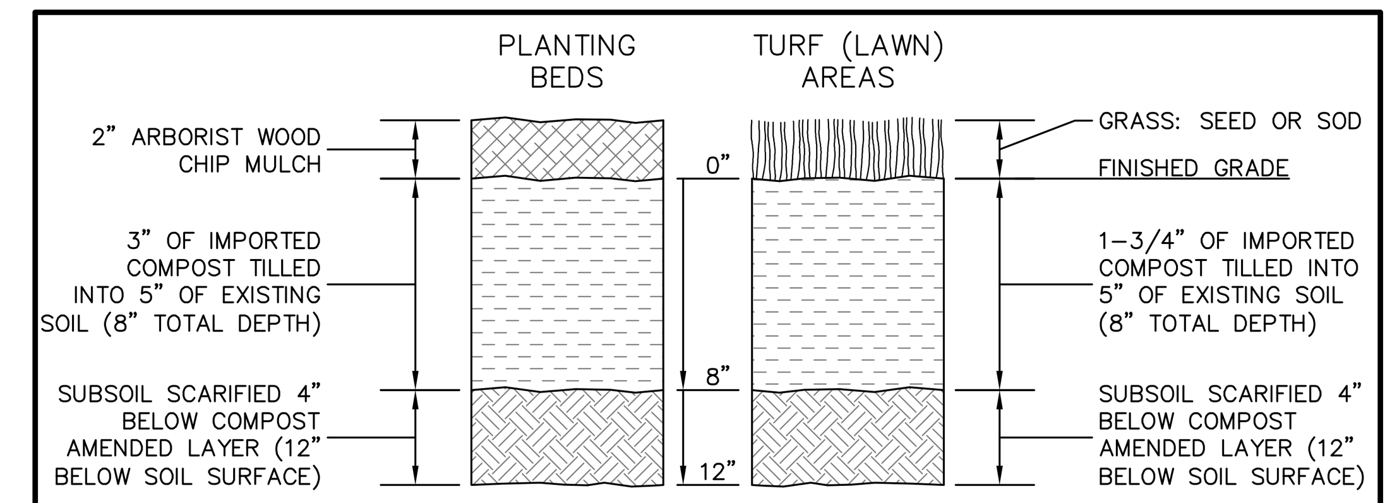
Plastic Covering Notes
1. Plastic sheeting shall have a minimum thickness of 6 mills and shall meet the requirements of STANDARD SPECIFICATIONS Section 9–14.5.
2. Covering shall be installed and maintained tightly in place by using sandbags or tires on ropes with a maximum 10–foot grid spacing in all directions. All seams shall be taped or weighted down full length and there shall be at least a 12 inch overlap of all seams.
3. Clear plastic covering shall be installed immediately on areas seeded between November 1 and March 31 and remain until vegetation is firmly established.
4. When the covering is used on un–seeded slopes, it shall be kept in place until the next seeding period.
5. Plastic covering sheets shall be buried two feet at the top of slopes in order to prevent surface water flow beneath sheets.
6. Proper maintenance includes regular checks for rips and dislodged ends.

Topsoil Stockpiling Notes
1. Stockpiles shall be stabilized (with plastic covering or other approved device) daily between November 1 and March 31.
2. In any season, sediment leaching from stock piles must be positively prevented.
3. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or when conditions exist that may otherwise be detrimental to proper grading or proposed sodding or seeding.
4. Previously established grades on the areas to be topsoiled shall be maintained according to the approval plan.

Seeding Notes
1. Landscaping Seed mixture shall be 45% Dwarf Tall Fescue, 30% Dwarf Perennial Rye, 30% Red Fescue, and 5% Colonial Bentgrass (low grow mix) and shall be applied at a rate of 120 pounds per acre. See Landscape Plans for alternate seed mixes and for general reference.
2. Seed beds planted between May 1 and October 31 will require irrigation and other maintenance as necessary to foster and protect the root structure.
3. For seed beds planted between October 31 and April 30, armoring of the seed bed will be necessary. (e.g., geotextiles, jute mat, clear plastic covering).
4. Before seeding, install needed surface runoff control measures such as gradient terraces, interceptor dikes, swales, level spreaders and sediment basins.
5. The seedbed shall be firm with a fairly fine surface, following surface roughening. Perform all cultural operations across or at right angles to the slope.
6. Fertilizers are to be used according to suppliers recommendations. Amounts used should be minimized, especially adjacent to water bodies and wetlands.

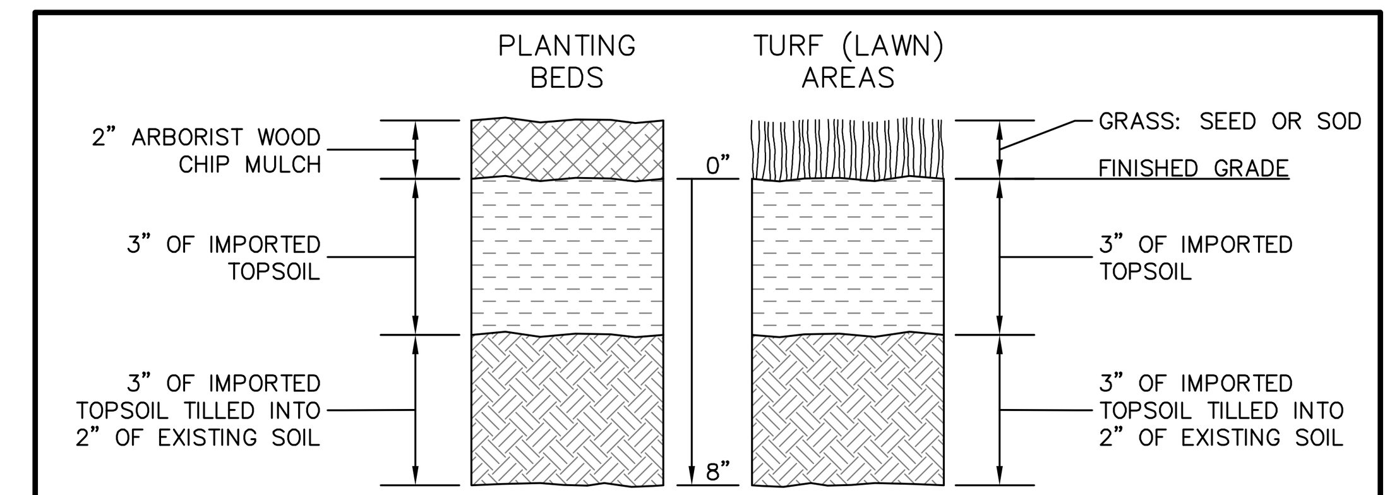
STANDARD EROSION & SEDIMENT CONTROL NOTES

- A Certified Erosion and Sediment Control Lead (CESCL) is required for all construction projects. The named person or firm shall be on–site or on–call at all times. For this site, the person/firm is Materials Testing & Consulting and their telephone number is: (360) 534–9777.
- Approval of this erosion & sediment control (ESC) plan does not constitute an approval of permanent road or drainage design (e.g. size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).
- The implementation of these ESC plans and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the applicant/contractor until all construction is completed and approved and vegetation/landscaping is established.
- The clearing limit boundaries shown on this plan shall be clearly flagged in the field prior to construction. During the construction period, no disturbance beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the applicant/contractor for the duration of construction.
- The ESC facilities shown on this plan must be constructed in conjunction with all clearing and grading activities, and in such a manner as to ensure that sediment and sediment–laden water do not enter the drainage system, roadways, or violate applicable surface water, ground water, or discharge standards.
- The ESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these ESC facilities shall be upgraded as needed for unexpected storm events and to ensure that sediment and sediment–laden water do not leave the site.
- The ESC facilities on active sites shall be inspected daily by the applicant/contractor––and maintained, repaired, or augmented as necessary to ensure their continued functioning.
- The ESC facilities on inactive sites shall be inspected monthly and within 48 hours following a major storm event (i.e. 1" rainfall in 24 hours) by the applicant/contractor – and maintained, repaired, or augmented as necessary to ensure their continued functioning.
- Storm drain inlets operable during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment. At no time shall more than 1 foot or 1/3 of the sump volume (whichever is less) of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned prior to project completion and acceptance. The cleaning operation shall not flush sediment–laden water offsite without treatment.
- Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures may be required to ensure that all paved areas are kept clean for the duration of the project.
- Roads shall be cleaned thoroughly as needed to protect downstream water resources or stormwater infrastructure. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area.
- From October 1 through April 30, no soils shall remain exposed and unworked for more than 2 days. From May 1 to September 30, no soils shall remain exposed and unworked for more than 7 days. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast. Linear construction activities, such as right–of–way and easement clearing, roadway development, pipelines, and trenching for utilities, shall comply with these requirements. These stabilization requirements apply to all soils on site, whether at final grade or not. The local permitting authority may adjust these time limits if it can be shown that a development site's erosion or runoff potential justifies a different standard.
- From October 1 through April 30, clearing, grading, and other soil–disturbing activities shall only be permitted if shown to the satisfaction of the local permitting authority that the transport of sediment from the construction site to receiving waters will be prevented.
- Soil stockpiles must be stabilized and protected with sediment–trapping measures.
- All pollutants, including waste materials and demolition debris, that occur on site during construction shall be handled and disposed of in a manner that does not cause contamination of stormwater. Woody debris may be chopped and spread on site.
- Maintenance and repair of heavy equipment and vehicles and other activities which may result in discharge or spillage of pollutants to the ground or into stormwater runoff must be conducted using spill prevention measures, such as drip pans. Report all spills to 911.
- Water from most dewatering operations shall be discharged into a sediment trap or pond. Clean, non–turbid water may be discharged to state surface waters, provided the discharge does not cause erosion or flooding. Highly turbid or contaminated dewatering water from construction equipment operation, clamshell digging, concrete tremie pour, or work inside a cofferdam shall be handled separately from stormwater and properly disposed.



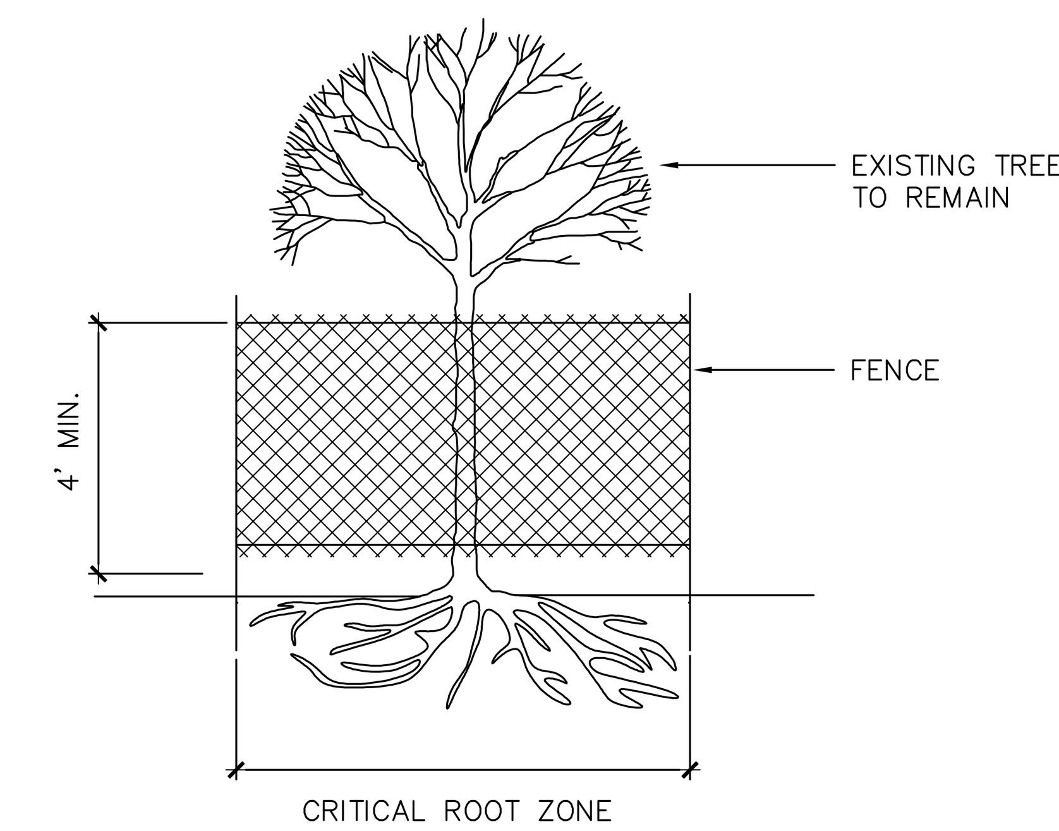
NOTES:
1. SEE "POST–CONSTRUCTION SOIL QUALITY AND DEPTH (BMP T5.13) GUIDELINES" ON THIS SHEET FOR ADDITIONAL INFORMATION.
2. THE DUFF LAYER AND NATIVE TOPSOIL SHOULD BE RETAINED IN AN UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICAL.
3. SOIL THAT ALREADY MEETS THE DEPTH AND ORGANIC MATTER QUALITY STANDARDS, AND HAS NOT BEEN COMPACTED/DISTURBED, DOES NOT NEED TO BE AMENDED.

SOIL AMENDMENT SECTION (BMP T5.13)–OPTIONS #2 & #3
N.T.S.



NOTES:
1. SEE "POST–CONSTRUCTION SOIL QUALITY AND DEPTH (BMP T5.13) GUIDELINES" ON THIS SHEET FOR ADDITIONAL INFORMATION.
2. THE DUFF LAYER AND NATIVE TOPSOIL SHOULD BE RETAINED IN AN UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICAL.
3. SOIL THAT ALREADY MEETS THE DEPTH AND ORGANIC MATTER QUALITY STANDARDS, AND HAS NOT BEEN COMPACTED/DISTURBED, DOES NOT NEED TO BE AMENDED.

SOIL AMENDMENT SECTION (BMP T5.13)–OPTION #4
N.T.S.



TREE PROTECTION NOTES

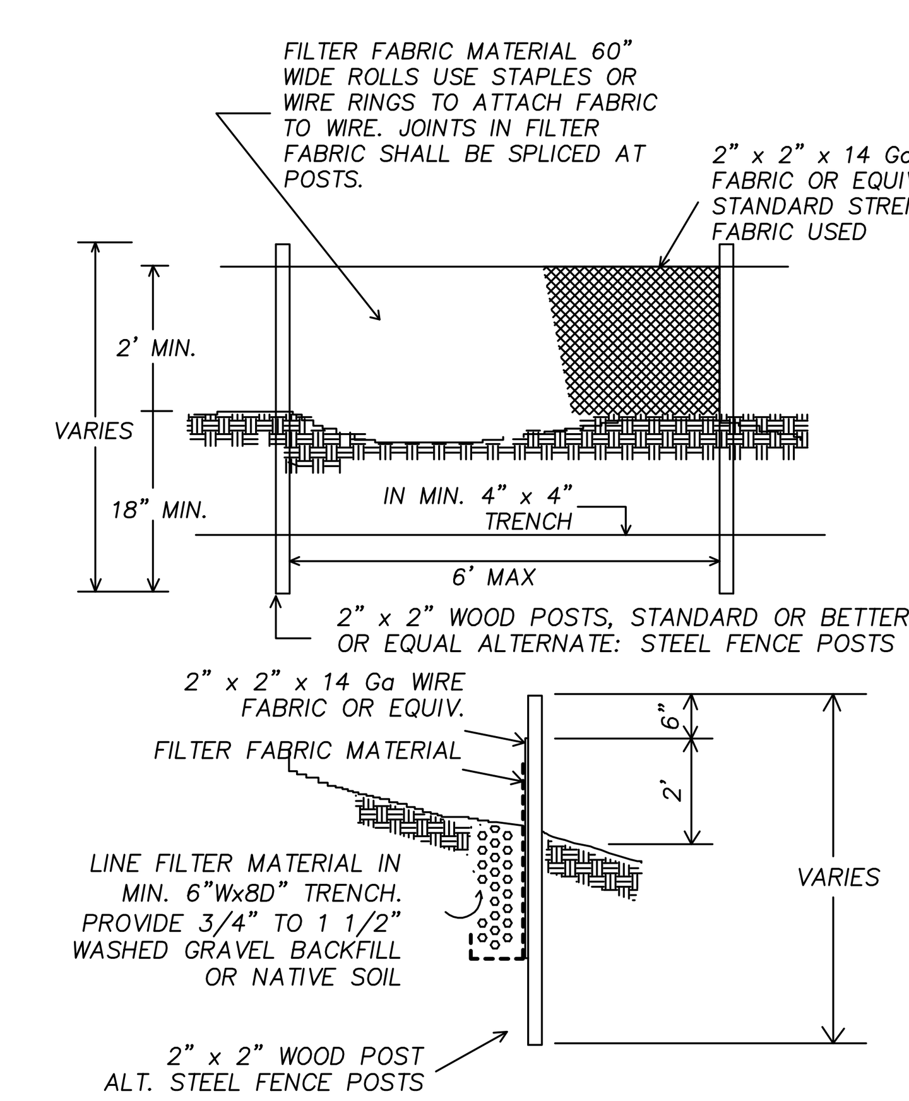
4–FOOT HIGH TEMPORARY PLASTIC FENCE SHALL BE PLACED AS SHOWN ON DRAWINGS AND AS DIRECTED BY THE FORESTER. AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS. FENCE POSTS SHOULD BE DRIVEN "T–BAR" PLACED NO GREATER THAN 8 FEET ON CENTER.

ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING AND COVERED WITH SOIL AS SOON AS POSSIBLE. FOR ROOTS OVER 1" IN DIAMETER WHICH ARE DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT.

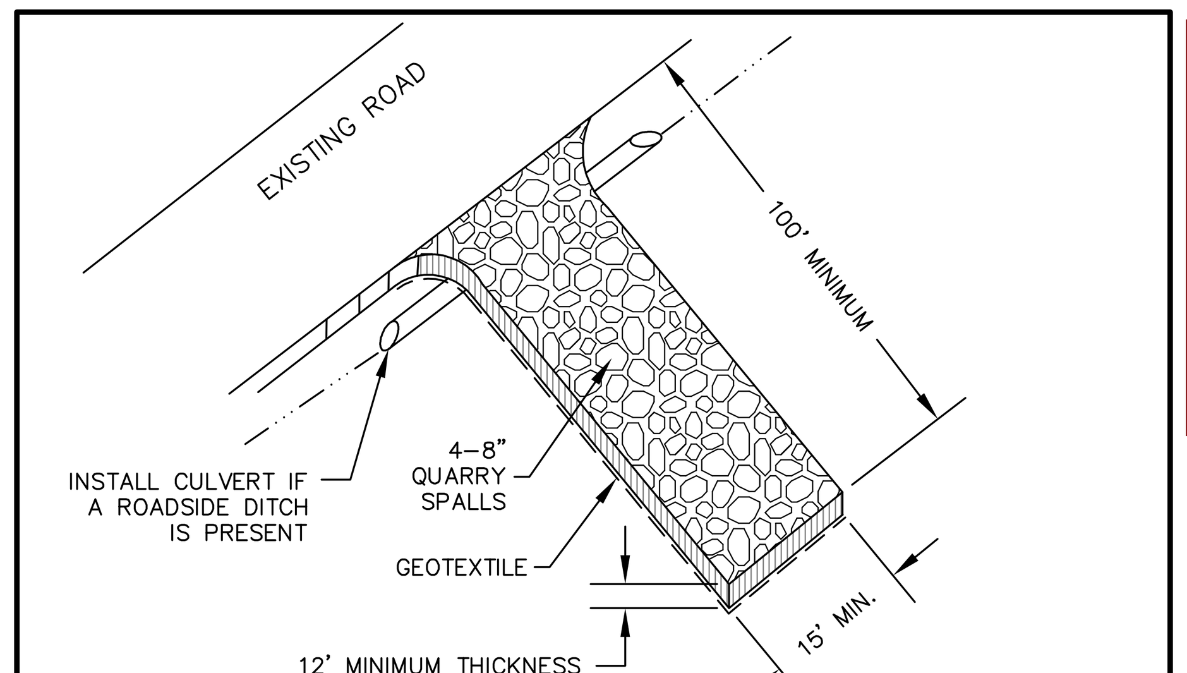
WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.

SEE TREE REPORT PREPARED BY PROFESSIONAL FORESTRY SERVICES, INC., DATED JULY 9, 2019, FOR REFERENCE.

TREE PROTECTION DETAIL
N.T.S.



SILT FENCE (BMP C233) DETAIL
N.T.S.



CONSTRUCTION ENTRANCE DETAIL
N.T.S.

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:22:57 PM
CITY OF TUMWATER
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM–18–1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT
CITY OF TUMWATER WA

EROSION CONTROL DETAILS AND NOTES

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/28/19

8/26/19
CHRISTOPHER M. MERRITT, STATE OF WASHINGTON, 37401, REGISTERED PROFESSIONAL ENGINEER

OLYMPIC ENGINEERING
PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_ECDT
C1.2

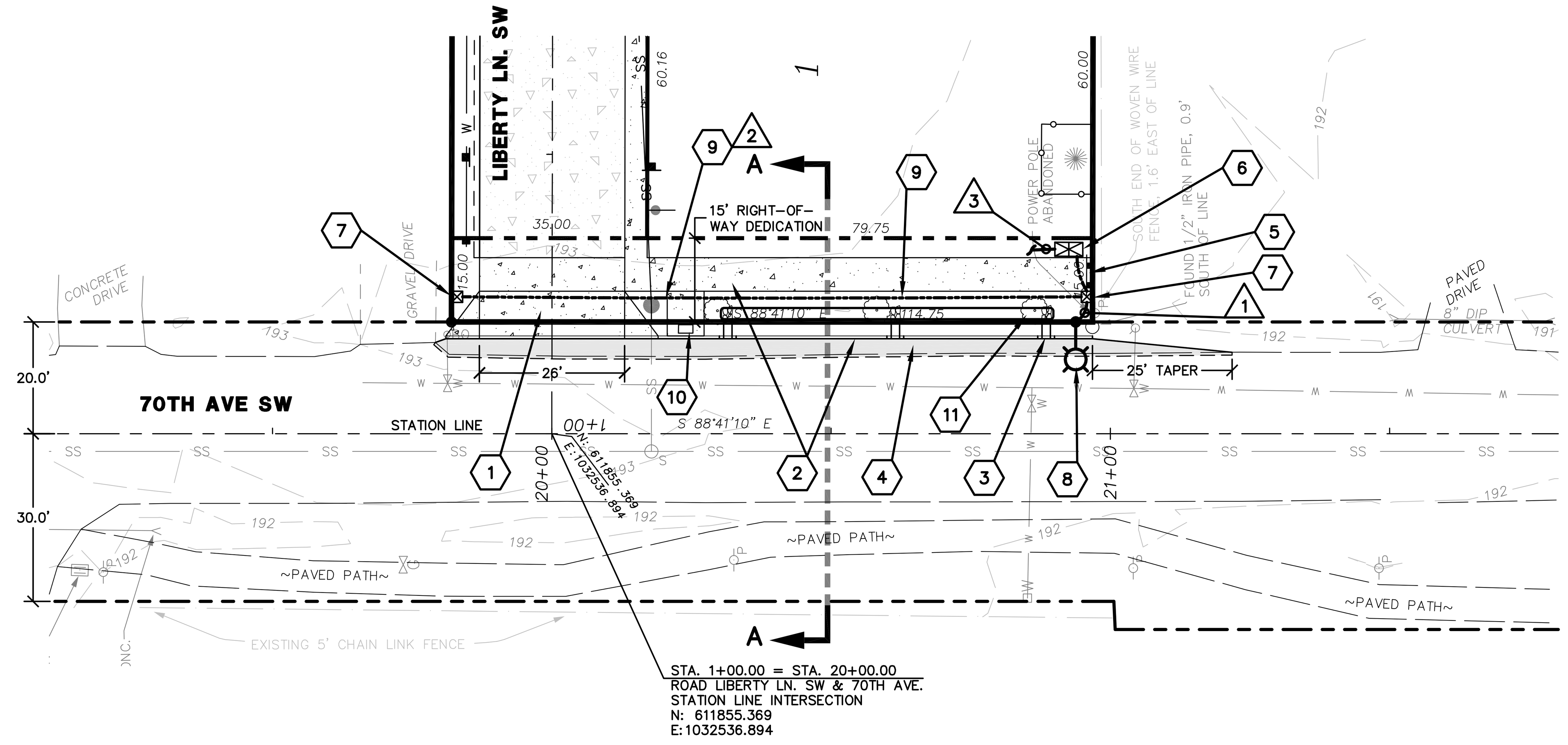
PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.

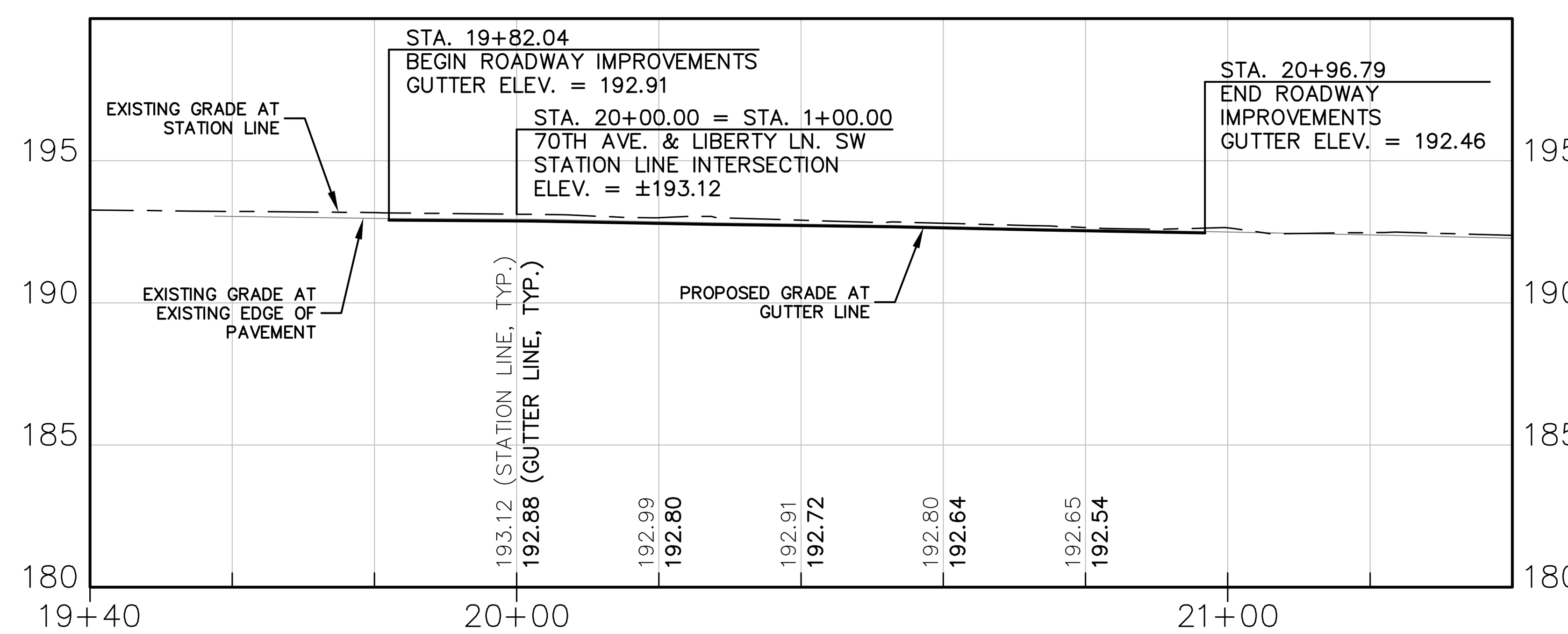
SOILS EVALUATION NOTE

EVALUATION OF THE NATIVE SUBGRADE AT THE BASE OF THE STORMWATER INFILTRATION/DETENTION SYSTEM, INCLUDING THE PERMEABLE PAVEMENT SUBGRADE, IS REQUIRED AFTER EXCAVATION TO SUBGRADE, AT THE OWNER'S EXPENSE. CONTRACTOR SHALL CONTACT MATERIALS TESTING & CONSULTING AT (360) 534-9777 AND OLYMPIC ENGINEERING A MINIMUM OF 7-DAYS PRIOR TO REACHING SUBGRADE TO SCHEDULE THE EVALUATION. SOILS SHALL BE EVALUATED TO A MINIMUM DEPTH OF 5' BELOW THE INFILTRATION SURFACE.

GRADING NOTES

1. CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER OF RECORD A MIN. 72 HOURS IN ADVANCE FOR SUBGRADE INSPECTION, STRUCTURAL FILL EVALUATION, STRUCTURAL FILL PLACEMENT, AND ANY OTHER INSPECTIONS REQUIRED BY THE CITY, AT OWNER'S EXPENSE. THE GEOTECHNICAL ENGINEER SHALL PROVIDE OLYMPIC ENGINEERING WITH A FINAL GRADING INSPECTION REPORT AS REQUIRED BY THE CITY.
2. IN ADDITION TO THE GEOTECHNICAL INSPECTIONS, A "WABO" REGISTERED SPECIAL INSPECTOR WITH EXPERIENCE IN GRADING AND EARTHWORK IS REQUIRED TO CONDUCT COMPACTION TESTING AND SHALL BE EMPLOYED BY THE OWNER. THE WABO INSPECTOR SHALL NOT BE THE GEOTECHNICAL ENGINEER, OLYMPIC ENGINEERING, OR AN EMPLOYEE OF THE CONTRACTOR. THE WABO INSPECTOR SHALL PROVIDE OLYMPIC ENGINEERING WITH A FINAL GRADING INSPECTION REPORT AS REQUIRED BY THE CITY.
3. ALL IMPROVEMENTS SHALL BE STAKED BY A SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK. THE SURVEYOR SHALL BE LICENSED BY THE STATE OF WASHINGTON.





HORIZONTAL SCALE: 1"=20 FEET
VERTICAL SCALE: 1"=5.00 FEET

NOTES:
1. THE NEW GUTTER LINE SHOULD BE A -2% PROJECTION DOWN FROM THE EXISTING EDGE OF PAVEMENT.
2. STATION LINE & GUTTER LINE ELEVATIONS SHOWN ARE AT EVEN 20' INTERVALS

CONSTRUCTION NOTES

1. STA. 20+00.00 (CENTER OF DRIVEWAY) NSTALL 26' WIDE TYPE 4 CEMENT CONCRETE DRIVEWAY PER WSDOT STANDARD PLAN F-80.10-04 DETAIL ON SHEET C2.6.
2. INSTALL CURB & GUTTER, ±59' LONG BIORETENTION SWALE (BMP T5.14B), AND SIDEWALK PER 70TH AVE. SW CROSS-SECTION A-A AND DETAILS ON SHEETS C2.3 & C2.4.
3. STA. 20+31.5, STA. 20+61.5, & STA. 20+88.5: INSTALL THREE CEMENT CONCRETE CURB INLETS PER DETAIL ON SHEET C2.4.
4. WIDEN 70TH AVE. SW PER ROAD CROSS-SECTION A-A DETAIL ON SHEET C2.4.
5. INSTALL TEMPORARY TYPE 1 BARRICADE AT END OF SIDEWALK PER MUTCD STANDARDS.
6. INSTALL MILBANK SERVICE DISCONNECT (MODEL #CP3B1111ASP058 OR APPROVED EQUAL), PEDESTAL AND FOUNDATION PER DETAIL ON SHEET C2.7. COORDINATE LOCATION AND ORIENTATION OF DISCONNECT WITH PSE AND CITY INSEPCTOR.
7. INSTALL TYPE 1 JUNCTION BOXES PER DETAIL ON SHEET C2.7 AND WSDOT STANDARD PLAN J-40.10-03. WHERE APPLICABLE, J-BOXES SHALL BE INSTALLED WITHIN 10' OF A LUMINAIRE POLE. J-BOXES SHALL BE TACK WELDED ONCE THE CITY HAS ACCEPTED THE STREET LIGHTING SYSTEM.
8. STA. 20+93.82, 20.0' LT. (CENTER OF FOUNDATION/POLE): INSTALL STREETLIGHT FOUNDATION, STANDARD, LUMINAIRE AND ASSOCIATED HARDWARE PER DETAILS ON SHEET C2.7. SEE STREET LIGHTING REQUIREMENTS THIS SHEET.
9. INSTALL CONDUIT AND CONDUCTORS PER WIRE SCHEDULE THIS SHEET. CONTACTOR SHALL INSTALL ADDITIONAL 2" SPARE CONDUIT WITH PULL STRING ACROSS 70TH AVE. FRONTAGE (CAN BE INSTALLED IN SAME TRENCH AS RUN #2).
10. INSTALL CONCRETE PAD AND 8 UNIT CLUSTER BOX UNIT (CBU) (FLORENCE MANUFACTURING MODEL #1570-8, OR OWNER APPROVED EQUAL) PER DETAILS ON SHEET C2.5. CONTRACTOR SHALL COORDINATE WITH OWNER ON THE CBU MANUFACTURER, MODEL, COLOR, ETC. AND COORDINATE INSTALLATION, LOCATION, AND INSPECTION WITH THE USPS.
11. INSTALL THREE STREET TREES (JAPANESE SNOWBALL) AT ±30' O.C. PER DETAIL ON SHEET C2.5. CONTRACTOR SHALL COORDINATE LOCATIONS WITH CITY PLANNING DEPT.

GENERAL NOTES

1. SEE DETAILS AND NOTES ON SHEETS C2.3-C2.7 FOR REFERENCE.

CITY OF TUMWATER
APPROVED
PERMIT #: TUM-19-0854
08/26/20192:23:22 PM
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

WIRE SCHEDULE

RUN NO.	CONDUIT SIZE	#8 AWG BARE GRD.	#8 AWG	#3 AWG	COMMENTS
1	2" PVC	1	2		ILLUMINATION
2	2" PVC				SPARE W/ PULL STRING
3	2" PVC	1		2	SERVICE

ELECTRICAL CONTRACTOR SHALL CONFIRM ABOVE CONDUCTOR AND CONDUIT SIZES AND QUANTITY AND REVISE AS NEEDED TO MEET NEC AND CITY REQUIREMENTS.

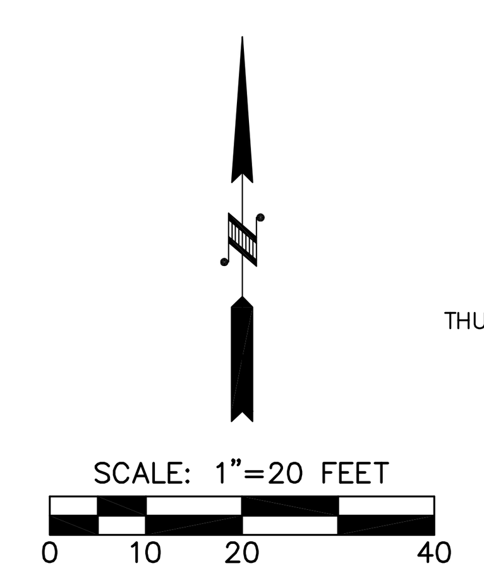
CONTACTOR SHALL INSTALL ADDITIONAL 2" SPARE CONDUIT WITH PULL STRING ACROSS 70TH AVE. FRONTAGE (CAN BE INSTALLED IN SAME TRENCH AS RUN #2).

STREET LIGHTING REQUIREMENTS

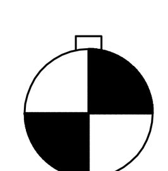
POLE TYPE, MOUNTING HEIGHTS, ARM LENGTH, POWER SOURCE, LUMINAIRE, AND BOLT PATTERNS SHALL BE AS FOLLOWS:

POLE TYPE: SEE DEVELOPMENT GUIDELINES SECTION 4.31 POLES SHALL BE ALUMINUM SPUN
MOUNTING HEIGHT: 30 FT.
ARM LENGTH: 8 FT. W/ DAVIT STYLE MAST ARM
POWER SOURCE: 240 VAC, SINGLE PHASE, 3 WIRE
LUMINAIRE TYPE: LED CREE (250W HPS EQUIVALENT) XSP1 HO HT-3ME-100W-30K-UL-SV-R
BOLT PATTERN: PER MANUFACTURER'S SPECIFICATIONS
BASE STYLE: PER MANUFACTURER'S SPECIFICATIONS

CONTRACTOR SHALL CONFIRM ABOVE REQUIREMENTS AND SPECIFICATIONS WITH CITY PRIOR TO PROCUREMENT



BASIS OF MERIDIAN:
THURSTON COUNTY HIGH PRECISION NETWORK BASED ON THURSTON COUNTY CONTROL POINT NO'S 1299 AND 566A = SOUTH 39° 36' 03" WEST.



VERTICAL DATUM
NGVD 29

BASIS OF VERTICAL DATUM:
THURSTON COUNTY CONTROL POINT NO. 1299, ELEV.=195.56' NGVD 29.

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM-18-1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT
CITY OF TUMWATER WA

70TH AVE. SW FRONTAGE IMPROVEMENT PLAN AND PROFILE

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: 1" = 20'
DATE: 6/28/19

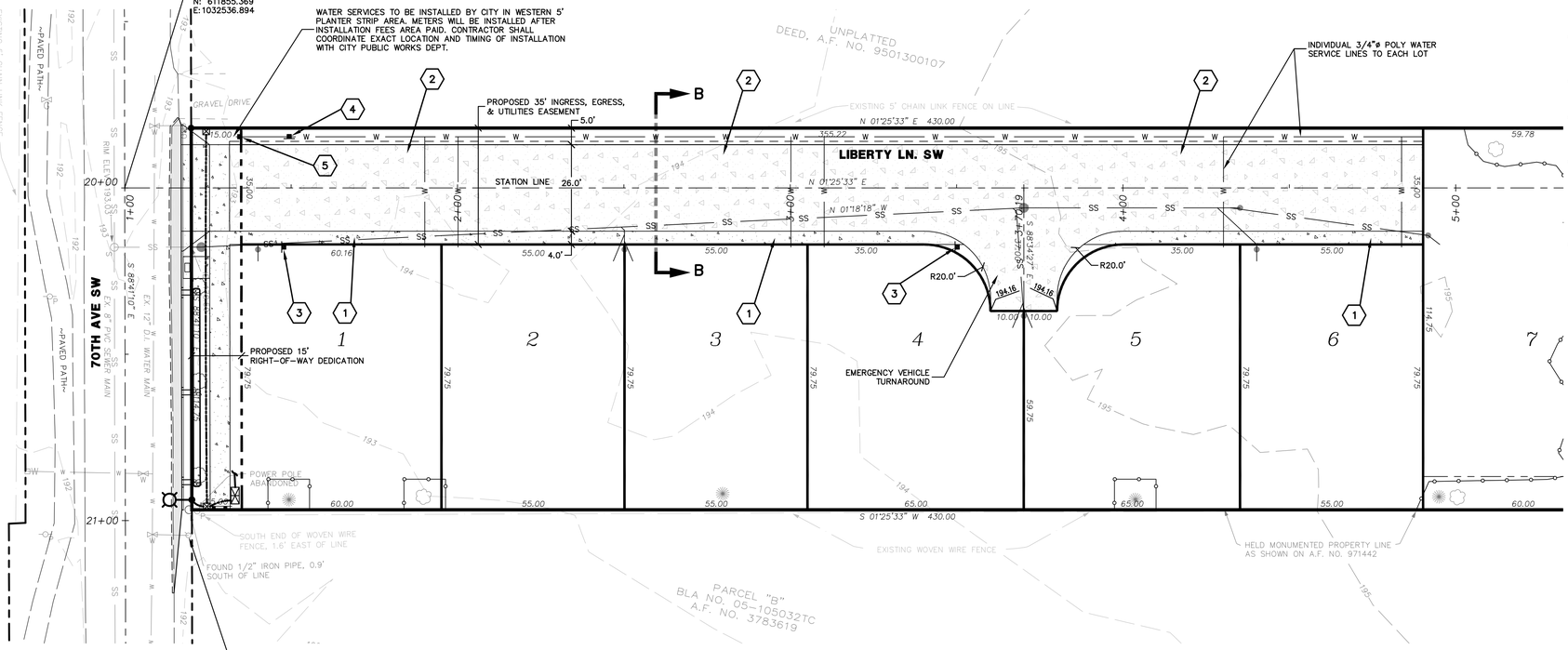
8/26/19
CHRISTOPHER M. MERRITT
STATE OF WASHINGTON
37401
REGISTERED PROFESSIONAL ENGINEER

OLYMPIC ENGINEERING
PO Box 12690
Olympia, WA 98508
360.705.2474 www.olyeng.com
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_FIPL

C2.1

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.



CONSTRUCTION NOTES

1. INSTALL 4' WIDE BY 6" THICK CONCRETE SIDEWALK PER DETAILS AND LIBERTY LN. SW ROADWAY SECTION B–B ON SHEET C2.4.
2. CONSTRUCT PERMEABLE PRIVATE ROADWAY PER PROFILE AND ROAD 'A' ROADWAY SECTION B–B DETAIL ON SHEET C2.4.
3. INSTALL TWO "FIRE LANE NO PARKING" SIGNS PER DETAIL ON SHEET C2.5. COORDINATE EXACT LOCATIONS WITH CITY FIRE MARSHAL.
4. CONTACTOR SHALL OBTAIN EDUCATION SIGN FROM THE CITY FOR THE PERMEABLE PAVEMENT ROADWAY AND COORDINATE SIGN LOCATION AND ORIENTATION WITH CITY. SIGN SHALL BE INSTALLED ON A 4"x4" PRESSURE TREATED POST IMBEDDED IN MIN. 30" DEEP x 8" DIAM. CONCRETE. TOP OF SIGN SHALL BE NO HIGHER THAN 42" ABOVE FINISHED GRADE.
5. INSTALL "STOP" AND "LIBERTY LN SW" SIGNS PER DETAIL AND NOTES ON SHEET C2.5.

GENERAL NOTES

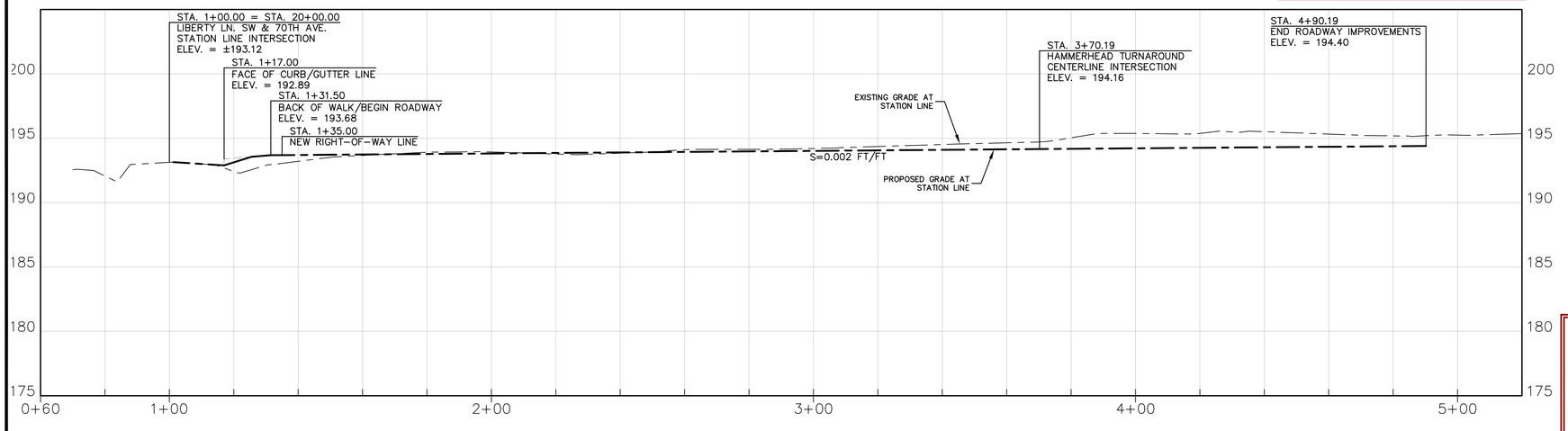
1. SEE DETAILS AND NOTES ON SHEETS C2.3–2.6 FOR REFERENCE.

SOILS EVALUATION NOTE

EVALUATION OF THE NATIVE SUBGRADE AT THE BASE OF THE STORMWATER INFILTRATION/DETENTION SYSTEM, INCLUDING THE PERMEABLE PAVEMENT SUBGRADE, IS REQUIRED AFTER EXCAVATION TO SUBGRADE, AT THE OWNER'S EXPENSE. CONTRACTOR SHALL CONTACT MATERIALS TESTING & CONSULTING AT (360) 534–9777 AND OLYMPIC ENGINEERING A MINIMUM OF 7–DAYS PRIOR TO REACHING SUBGRADE TO SCHEDULE THE EVALUATION. SOILS SHALL BE EVALUATED TO A MINIMUM DEPTH OF 5' BELOW THE INFILTRATION SURFACE.

GRADING NOTES

1. SPOT ELEVATIONS SHOWN ARE FINISHED GRADE.
2. CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER OF RECORD A MIN. 72 HOURS IN ADVANCE FOR SUBGRADE INSPECTION, STRUCTURAL FILL EVALUATION, STRUCTURAL FILL PLACEMENT, AND ANY OTHER INSPECTIONS REQUIRED BY THE CITY, AT OWNER'S EXPENSE. THE GEOTECHNICAL ENGINEER SHALL PROVIDE OLYMPIC ENGINEERING WITH A FINAL GRADING INSPECTION REPORT AS REQUIRED BY THE CITY.
3. IN ADDITION TO THE GEOTECHNICAL INSPECTIONS, A "WABO" REGISTERED SPECIAL INSPECTOR WITH EXPERIENCE IN GRADING AND EARTHWORK IS REQUIRED TO CONDUCT COMPACTION TESTING AND SHALL BE EMPLOYED BY THE OWNER. THE WABO INSPECTOR SHALL NOT BE THE GEOTECHNICAL ENGINEER, OLYMPIC ENGINEERING, OR AN EMPLOYEE OF THE CONTRACTOR. THE WABO INSPECTOR SHALL PROVIDE OLYMPIC ENGINEERING WITH A FINAL GRADING INSPECTION REPORT AS REQUIRED BY THE CITY.
4. ALL IMPROVEMENTS SHALL BE STAKED BY A SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK. THE SURVEYOR SHALL BE LICENSED BY THE STATE OF WASHINGTON.



HORIZONTAL SCALE: 1"=20 FEET
VERTICAL SCALE: 1"=5.00 FEET

VERTICAL DATUM
NGVD 29

BASIS OF VERTICAL DATUM:
THURSTON COUNTY CONTROL POINT NO. 1299, ELEV.=195.56' NGVD 29.

SCALE: 1"=20 FEET
0 10 20 40

BASIS OF MERIDIAN:
THURSTON COUNTY HIGH PRECISION NETWORK BASED ON THRUSTON COUNTY CONTROL POINT NO'S 1299 AND 566A = SOUTH 39° 36' 03" WEST.

CITY OF TUMWATER
Washington's First Community

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:29:11 PM
Community Uevelopment Department
Al Christensen, CBO Building/Fire Safety Official

CITY OF TUMWATER

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:23:53 PM
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM–18–1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT
CITY OF TUMWATER WA

LIBERTY LN. SW PRIVATE ROADWAY PLAN AND PROFILE

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: 1" = 20'
DATE: 6/28/19

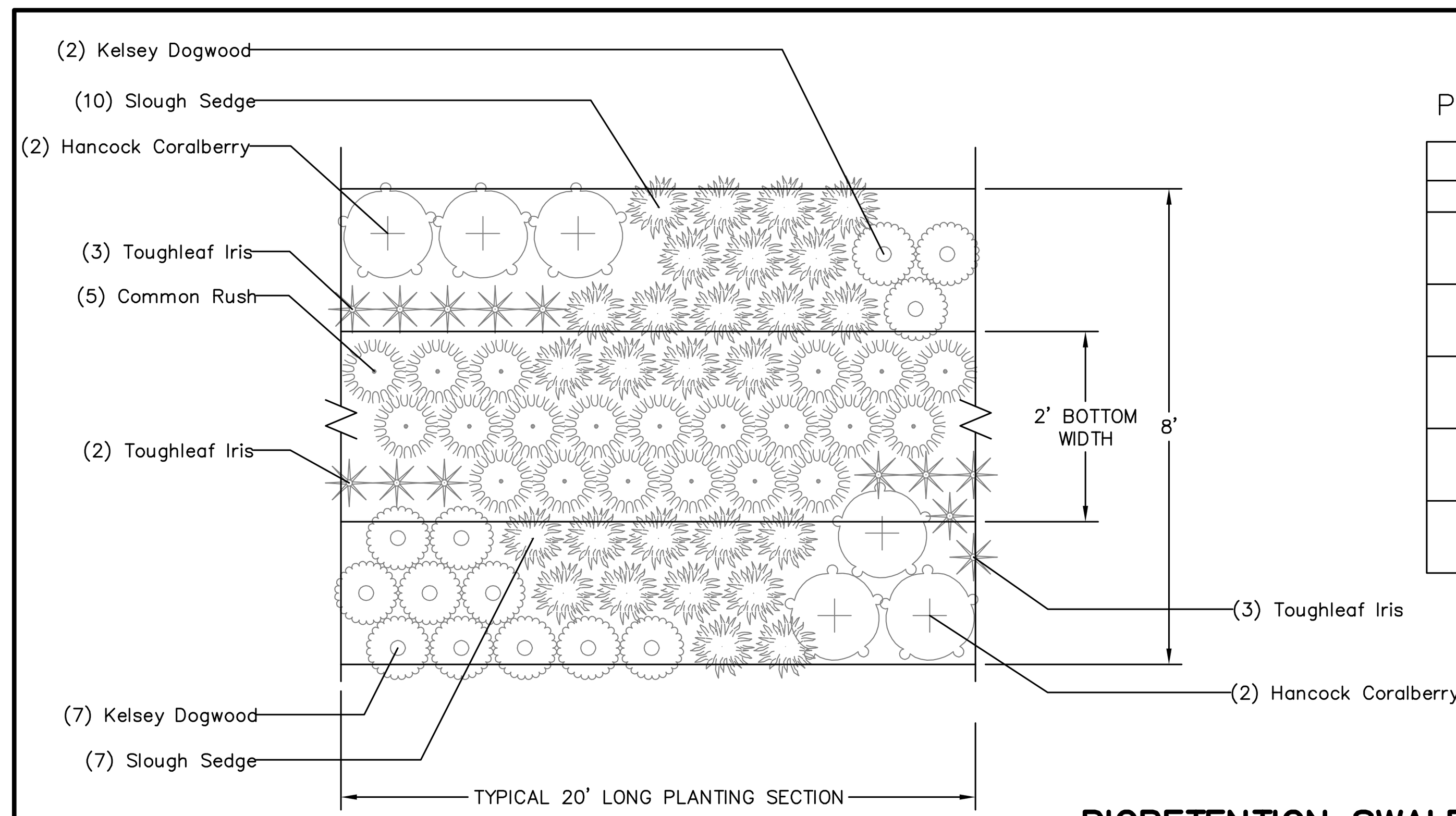
5/28/19
CHRISTOPHER M. RIDENOUR
STATE OF WASHINGTON
37401
REGISTERED PROFESSIONAL ENGINEER

PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
OLYMPIC ENGINEERING
Civil Engineering - Land Planning - Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_RDPL

C2.2
SHEET: 5 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.



PLANT SCHEDULE (PER 20 FT. SECTION OF SWALE)

SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY
	CAREX OBNUPTA	SLOUGH SEDGE	1 GAL	24" o.c.	17
	CORNUS SERICEA 'KELSEYI'	KELSEY DOGWOOD	1 GAL	24" o.c.	9
	IRIS TENAX	TOUGHLEAF IRIS	1 GAL	18" o.c.	8
	JUNCUS EFFUSUS	COMMON RUSH	1 GAL	24" o.c.	5
	SYMPHORICARPOS X CHENAULTII 'HANCOCK'	HANCOCK CORALBERRY	1 GAL	36" o.c.	4

NOTES:
1. PLANTING SECTION SHALL BE REPEATED AND ADJUSTED AS NECESSARY TO FILL BIORETENTION SWALE.
2. PLANTINGS MAY BE ADJUSTED, BUT NO GROUP OF PLANTS SMALLER THAN 3 SHALL BE ALLOWED.

BIORETENTION SWALE PLANTING DETAIL

N.T.S.

BIORETENTION SOIL MIXTURE REQUIREMENTS

Bioretention soil shall be a well–blended mixture of mineral aggregate and composted material measured on a volume basis. Bioretention soil shall consist of two parts fine compost (approximately 35 to 40 percent) by volume and three parts mineral aggregate (approximately 60 to 65 percent), by volume. The mixture shall be well blended to produce a homogeneous mix.

Mineral Aggregate:
- Percent Fines: A range of 2 to 4 percent passing the US #200 sieve is ideal and fines should not be above 5 percent for a proper functioning specification according to ASTM D422.

Mineral Aggregate Gradation:
- Mineral Aggregate shall be free of wood, waste, coating, or any other deleterious material. The aggregate portion of the Bioretention Soil Mix (BSM) should be well–graded. According to ASTM D 2487–98 (Classification of Soils for Engineering Purposes (Unified Soil Classification System)), well–graded sand should have the following gradation coefficients:
  a. Coefficient of Uniformity (Cu = D60/D10) equal to or greater than 4, and
  b. Coefficient of Curve (Cc = (D30)2/D60 x D10) greater than or equal to 1 and less than or equal to 3.

Aggregate shall be analyzed by an accredited lab using the US sieve numbers and gradation noted below.

US Sieve Number	Percent Passing
0.375 inch	100
4	95–100
10	75–90
40	24–40
100	4–10
200	2–5

Where existing soils meet the above aggregate gradation, those soils may be amended rather than importing mineral aggregate.

Compost to Aggregate Ratio, Organic Matter Content, Cation Exchange Capacity:

- Compost to aggregate ratio: 60–65 percent mineral aggregate, 35–40 percent compost.
- Organic matter content: 5–8 percent by weight.
- Cation Exchange Capacity (CEC) must be > 5 milliequivalents/100 g dry soil. Note: Soil mixes meeting the above specifications do not have to be tested for CEC. They will readily meet the minimum CEC.

Composted Material
To ensure that the BSM will support healthy plant growth and root development, contribute to biofiltration of pollutants, and not restrict infiltration when used in the proportions cited herein, the following compost standards are required.

Compost material must comply with Section 9–14.4(8) of the WSDOT Standard Specifications, M 41–10, 2016 Edition, Amended April 4, 2016.

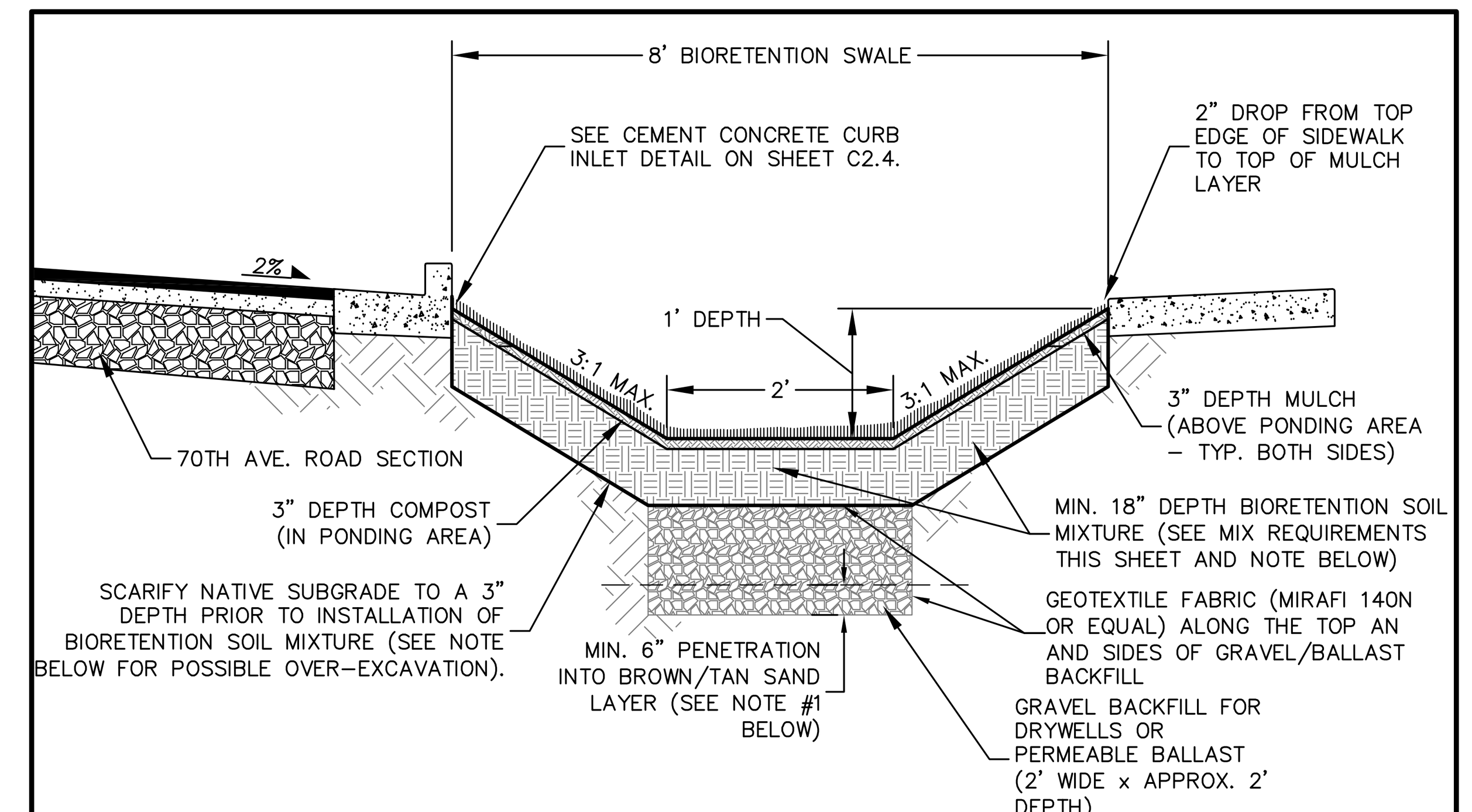
Compost not conforming to the above requirements or taken from a source other than those tested and accepted shall be immediately removed from the project and replaced.

Acceptable compost product sources include those listed on the WSDOT Qualified Products List.

Mulch Layer
Bioretention areas should be designed with a mulch layer or a dense groundcover. Properly selected mulch material also reduces weed establishment, regulates soil temperatures and moisture, and adds organic matter to soil. Mulch should be:

- Compost in the bottom of the facilities (compost is less likely to float than wood chip mulch and is a better source for organic materials).
- Wood chip mulch composed of shredded or chipped hardwood or softwood on cell slopes above ponding elevation and rim area. Arborist mulch is mostly woody trimmings from trees and shrubs and is a good source of mulch material. Wood chip operations are a good source for mulch material that has more control of size distribution and consistency. Do not use shredded construction wood debris or any shredded wood to which preservatives have been added.
- Free of weed seeds, soil, roots and other material that is not trunk or branch wood and bark.
- A maximum of 3 inches thick (thicker applications can inhibit proper oxygen and carbon dioxide cycling between the soil and atmosphere).

Mulch shall not include weed seeds, soil, roots and other material that are not from the above ground components of a tree, grass clippings (decomposing grass clippings are a source of nitrogen and are not recommended for mulch in bioretention areas), pure bark (bark is essentially sterile and inhibits plant establishment).



NOTES:
1. CONTRACTOR SHALL OVER–EXCAVATE THE SWALE TO A MIN. OF 6" INTO THE NATIVE LIGHT BROWN/TAN SAND LAYER (FOUND APPROXIMATLEY 4–FEET BELOW EXISTING GRADE) AS NOTED IN THE SOILS REPORT PREPARED BY MATERIALS TESTING & CONSULTING (MTC). LOOSELY BACKFILL WITH FREE DRAINING MATERIAL (GRAVEL BACKFILL FOR DRYWELLS OR PERMEABLE BALLAST) UP TO THE BOTTOM OF THE BIORETENTION SOIL MIX. EXCAVATION SHALL BE MONITORED BY MTC TO ENSURE THE ABOVE REQUIREMENT IS BEING MET.
2. SEE "BIORETENTION SWALE PLANTING DETAIL" FOR REQUIRED PLANTINGS.
3. OLYMPIC ENGINEERING IS REQUIRED TO WITNESS AND CERTIFY CONSTRUCTION OF THE BIORETENTION SWALE. CONTRACTOR SHALL NOTIFY OLYMPIC ENGINEERING A MINIMUM OF 72–HOURS IN ADVANCE OF ANY WORK ON THE SWALES. THIS IS IN ADDITION TO THE REQUIRED OVEREXCAVATION INSPECTIONS BY MTC (NOTED ABOVE).

BIORETENTION SWALE (BMP T5.14B) DETAIL

N.T.S.

CITY OF TUMWATER
APPROVED
PERMIT #: TUM-19-0854
08/26/20192:24:21 PM
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM–18–1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT
CITY OF TUMWATER WA

DRAINAGE DETAILS AND NOTES

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/28/19

CHRISTOPHER M. MERRITT, STATE OF WASHINGTON, 37401, REGISTERED PROFESSIONAL ENGINEER, 8/26/19

OLYMPIC ENGINEERING
PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_DRDT1
C2.3
SHEET: 6 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.

PERMEABLE PAVEMENT NOTES

Subgrade
- Compact the subgrade to the minimum necessary for structural stability. Two guidelines currently used to specify subgrade compaction are "firm and unyielding" (qualitative), and 90– 92% Standard Proctor (quantitative). Do not allow heavy compaction due to heavy equipment operation. The subgrade should not be subject to truck traffic.
- After compaction, the subgrade surface shall be hand–raked or gently scarified to eliminate any "soil skin" that has formed.
- To prevent compaction when installing the aggregate base, the following steps (back–dumping) should be followed: 1) the aggregate base is dumped onto the subgrade from the edge of the installation and aggregate is then pushed out onto the subgrade; 2) trucks then dump subsequent loads from on top of the aggregate base as the installation progresses.
- **Any subgrade areas inadvertently compacted during site work shall be scarified to a minimum 6" depth prior to placement of the base course under the observance of the geotechical engineer.**

Geotextile Fabric
Geotextile fabric shall conform to Standard Specification Section 9–33 (Table 3) "Geotextile for separation or soil stabilization" (Mirafi 140N or equal).

Aggregate Top Course
Washed "Gravel Backfill for Drains" per WSDOT 9–03.12(4).

Aggregate Base Course
Washed "Permeable Ballast" per WSDOT 9–03.9(2).

Wearing Layer
For all surface types, a minimum initial infiltration rate of 20 inches per hour is necessary. To improve the probability of long–term performance, significantly higher initial infiltration rates are desirable.

Porous Asphalt:
- Products must have adequate void spaces through which water can infiltrate (minimum 200 in/hr). A void space within the range of 16 – 25% is typical.\
- Aggregate shall consist of uniform, small– to medium–grained, crushed gravel meeting the specifications for "No. 8 Stone" per ASTM C–33.
- Binder shall conform to PG 70–22 criteria and should be placed at a ratio of 5.75 to 6.00 percent by weight.
- Pavement shall be compacted to a firm condition by means of approximately two passes with a heavy vibratory roller. Excessive compaction should be avoided.

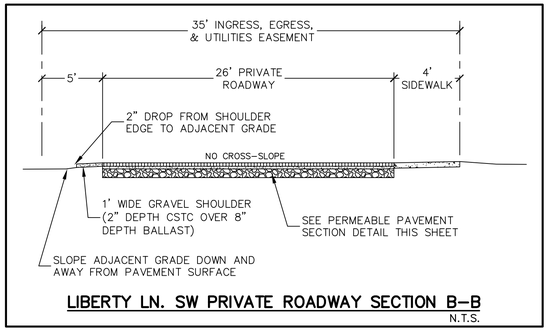
Pervious Concrete:
- Products must have adequate void spaces through which water can infiltrate (minimum 200 in/hr). A void space within the range of 15 – 35% is typical.
- Aggregate shall consist of uniform, small– to medium–grained, crushed gravel meeting the specifications of "No. 8 Stone" per ASTM C–33. Typically, the concrete paste is a six–sack mix with a water/cement ratio in the range of 0.27 to 0.35. The finished concrete shall provide a minimum compressive strength of 2,000 psi.

Acceptance Test
- Driveways and parking lot areas can be tested by simply throwing a bucket of water on the surface. If anything other than a scant amount puddles or runs off the surface, additional testing is necessary prior to accepting the construction.

Maintenance During Construction, Including Construction of the Buildings
Care shall be taken to prevent dirt, sand, and other debris from being conveyed or tracked onto the permeable pavement during all phases of construction, including construction of the buildings. Over time, dirt, sand, dust, and other debris can collect in permeable pavement voids and reduce its porosity, which can negatively affect the functionality of the system.

In order to preserve maximum functionality, the permeable pavement shall be cleaned semi–annually until final site stabilization and building construction completion and after final project completion. Particular attention should be given to areas where debris accumulation is visible. Best practices for maintaining permeable pavement include sweeping with a streetsweeper that uses water in conjunction with brushes and vacuum to clean debris from the surface and prevent it from reducing the pavements void volume. If that method is unsuccessful, or as an alternate method of cleaning if using a streetsweeper is not practical, permeable pavement may be cleaned by washing with high pressure water. Using a vacuum to collect as much of the water–debris mixture as possible may increase the effectiveness of pressure washing.

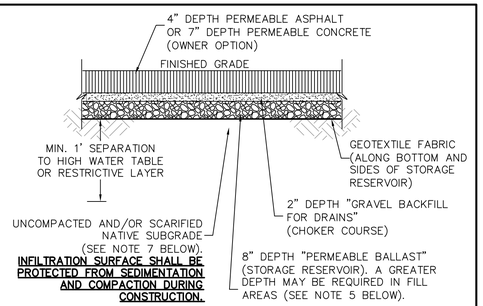
Maintenance
- Erosion and introduction of sediment from surrounding land uses should be strictly controlled after construction by amending exposed soil with compost and mulch, planting exposed areas as soon as possible, and armoring outfall areas.
- Surrounding landscaped areas should be inspected regularly and possible sediment sources controlled immediately.
- Installations can be monitored for adequate or designed minimum infiltration rates by observing drainage immediately after heavier rainstorms for standing water or infiltration tests using ASTM C1701.
- Clean permeable pavement surfaces to maintain infiltration capacity at least once or twice annually following recommendations below.
- Utility cuts should be backfilled with the same aggregate base used under the permeable paving to allow continued conveyance of stormwater through the base, and to prevent migration of fines from the standard base aggregate to the more open graded permeable base material (Diniz, 1980).
- Ice build up on permeable pavement is reduced and the surface becomes free and clear more rapidly compared to conventional pavement. deicing and sand application may be reduced or eliminated and the permeable pavement installation should be assessed during winter months and the winter traction program developed from those observations. Vacuum and sweeping frequency will likely be required more often if sand is applied.
- Clean permeable pavement surfaces by sweeping with a streetsweeper that uses water in conjunction with brushes and vacuum. If that method is unsuccessful, or as an alternate method of cleaning if using a streetsweeper is not practical, permeable pavement may be cleaned by washing with high pressure water. Using a vacuum to collect as much of the water–debris mixture as possible may increase the effectiveness of pressure washing.



LIBERTY LN. SW PRIVATE ROADWAY SECTION B–B
N.T.S.

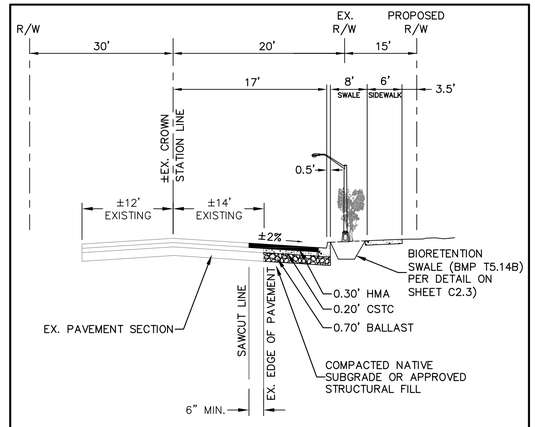
GENERAL NOTES (STREET CONSTRUCTION)

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL IN ACCORDANCE WITH M.U.T.C.D. PRIOR TO DISRUPTION OF ANY TRAFFIC, TRAFFIC CONTROL PLANS WILL BE PREPARED AND SUBMITTED TO THE CITY FOR APPROVAL. NO WORK SHALL COMMENCE UNTIL ALL APPROVED TRAFFIC CONTROL IS IN PLACE.
3. ALL CURBS, STREET GRADES, SIDEWALK GRADES, AND ANY OTHER VERTICAL AND OR HORIZONTAL ALIGNMENT SHALL BE STAKED BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK.
4. WHERE NEW ASPHALT JOINS EXISTING, THE EXISTING ASPHALT SHALL BE CUT TO A NEAT VERTICAL EDGE AND TACKED WITH ASPHALT EMULSION TYPE CSS–1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE NEW ASPHALT WILL BE FEATHERED BACK OVER EXISTING TO PROVIDE FOR A SEAL AT THE SAW CUT LOCATION AND THE JOINT SEALED WITH GRADE AR–4000W PAVING ASPHALT.
5. COMPACTION OF SUBGRADE, ROCK, AND ASPHALT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
6. FORM AND SUBGRADE INSPECTION BY THE CITY IS REQUIRED BEFORE POURING CONCRETE. TWENTY–FOUR HOURS NOTICE IS REQUIRED FOR FORM INSPECTION.
7. SEE THESE GUIDELINES FOR TESTING AND SAMPLING FREQUENCIES.



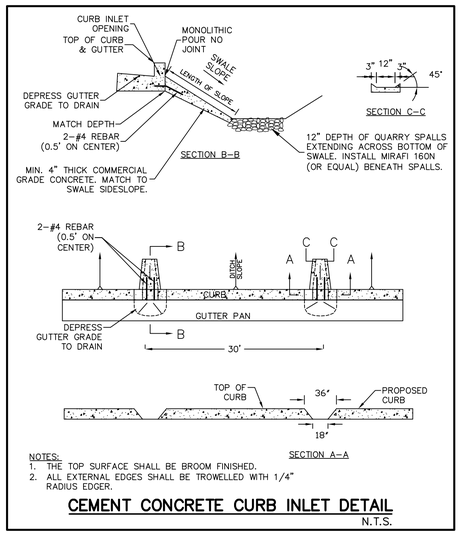
NOTES:
1. SEE PERMEABLE PAVEMENT CONSTRUCTION NOTES THIS SHEET FOR REFERENCE.
2. ALL THICKNESSES ARE COMPACTED DEPTHS.
3. EXCAVATE TO GRADE WITH LIGHT EQUIPMENT WITH RUBBER TIRES. MINIMIZE DISTURBANCE OF THE SUBGRADE SOILS TO THE MAXIMUM EXTENT PRACTICAL.
4. THE SUBGRADE SOILS SHALL HAVE A MINIMUM CATION EXCHANGE CAPACITY OF 5 MILLIEQUIVALENTS PER 100 GRAMS OF DRY SOIL AND A MINIMUM ORGANIC CONTENT OF 1%. THESE ARE TO BE VERFIED BY THE GEOTECHNICAL ENGINEER.
5. ANY FILL NEEDED TO BRING THE PERMEABLE PAVEMENT SECTION UP TO GRADE SHALL CONSIST OF WASHED "PERMEABLE BALLAST" PER WSDOT 9–03.9(2).
6. EXPOSED SUBGRADE AND CRUSHED ROCK COURSES SHALL BE COMPACTED TO 90%.
7. **THE SUBGRADE SHALL BE EVALUATED BY MATERIALS TESTING & CONSULTING (MTC) (360–534–9777) AND OLYMPIC ENGINEERING. CONTRACTOR SHALL CONTACT MTC AND OLYMPIC ENGINEERING A MINIMUM OF 7–DAYS PRIOR TO REACHING SUBGRADE TO SCHEDULE THE EVALUATION.** THE NATIVE SUBGRADE IS REQUIRED TO HAVE A MINIMUM CATION EXCHANGE CAPACITY (CEC) OF 5 MEQ/100G AND AN ORGANIC CONTENT GREATER THAN 1%.

PERMEABLE PAVEMENT SECTION
N.T.S.



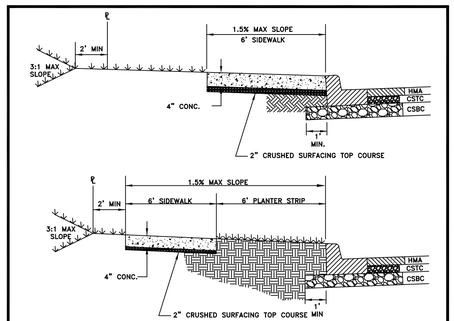
NOTES:
1. EXPOSED SUBGRADE AND CRUSHED ROCK COURSES SHALL BE COMPACTED TO 95%.
2. GRADATIONS SHALL MEET WSDOT SPECIFICATIONS.
3. THE CSTC AND BALLAST SECTIONS NOTED ABOVE MAY BE REPLACED WITH A 12" DEPTH OF CSBC.
4. CONTRACTOR SHALL CONTACT DESIGN ENGINEER AND CITY INSPECTOR TO INSPECT EXISTING SUBGRADE PRIOR TO INSTALLATION OF THE ROADWAY SECTION. CONTRACTOR SHALL PROVIDE A MIN. 48–HOUR NOTICE.

70TH AVE. SW WIDENING SECTION A–A
N.T.S.



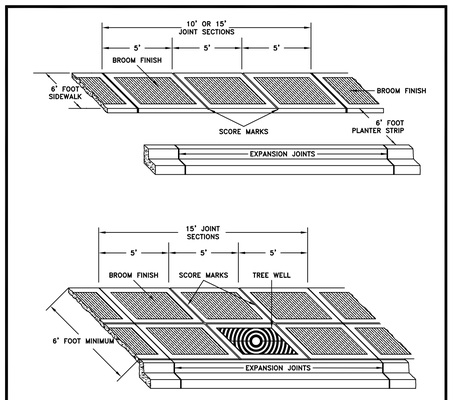
NOTES:
1. THE TOP SURFACE SHALL BE BROOM FINISHED.
2. ALL EXTERNAL EDGES SHALL BE TROWELLED WITH 1/4" RADIUS EDGER.

CEMENT CONCRETE CURB INLET DETAIL
N.T.S.



GENERAL NOTES:
1. FORMS SHALL BE WOOD OR METAL AND SHALL EXTEND FOR THE FULL DEPTH OF THE CONCRETE.
2. ALL FORMS SHALL BE CLEAN, STRAIGHT, FREE FROM WARP, AND OF SUFFICIENT STRENGTH TO RESIST THE PRESSURE OF THE CONCRETE WITHOUT SPRING.
3. CONCRETE DRIVEWAYS REQUIRE A MINIMUM DEPTH OF 6".
4. THE TOP OR TOE OF ALL SLOPES SHALL BEGIN 2' BACK OF THE SIDEWALK.

CITY OF TUMWATER, WASHINGTON DEPT. OF PUBLIC WORKS				
SIDEWALK				
APPROVED BY:				DWG. NO. ST-4
CITY ENGINEER				
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE



* USE DECORATIVE SCORE MARKS FOR NEW SIDEWALK IN: CAPITOL BOULEVARD – BREWERY DISTRICT – TOWN CENTER

GENERAL NOTES:
1. FORMS SHALL BE WOOD OR METAL AND SHALL EXTEND FOR THE FULL DEPTH OF THE CONCRETE.
2. ALL FORMS SHALL BE STRAIGHT, FREE FROM WARP AND OF SUFFICIENT STRENGTH TO RESIST THE PRESSURE OF THE CONCRETE WITHOUT SPRING.
3. EXPANSION JOINT MATERIAL TO BE 5/8" THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE AND INSTALLED FLUSH OR 1/4" BELOW FINISH GRADE.
4. FORM AND SUBGRADE INSPECTION ARE REQUIRED BEFORE PLACING CONCRETE.
5. SCORE MARKS SHALL BE 1/8" TO 1/4" WIDE AND A MINIMUM OF 1" DEEP.
6. EXPANSION JOINTS SHALL BE INSTALLED IN THE CURB & GUTTER AND SIDEWALK AT THE PC AND PT FOR ALL CURB RETURNS. EXPANSION JOINTS SHALL BE PLACED IN THE SIDEWALK AT THE SAME LOCATIONS AS THOSE IN THE CURB & GUTTER WHEN THE SIDEWALK IS ADJACENT TO CURB & GUTTER, OR UNLESS OTHERWISE DIRECTED BY THE CITY.

CITY OF TUMWATER, WASHINGTON DEPT. OF PUBLIC WORKS				
SIDEWALK SPACING EXPANSION JOINTS & SCORE MARKS				
APPROVED BY:				DWG. NO. ST-5
CITY ENGINEER				
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE

CITY OF TUMWATER

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:24:41 PM

Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM–18–1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

ROADWAY DETAILS AND NOTES

GENDLEK SHORT PLAT

CITY OF TUMWATER WA

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/28/19

8/28/19
CHRISTOPHER M. MEEK
STATE OF WASHINGTON
37401
REGISTERED PROFESSIONAL ENGINEER

OLYMPIC ENGINEERING
PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_RDDT1

C2.4
SHEET: 7 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.

STANDARD STORMWATER NOTES

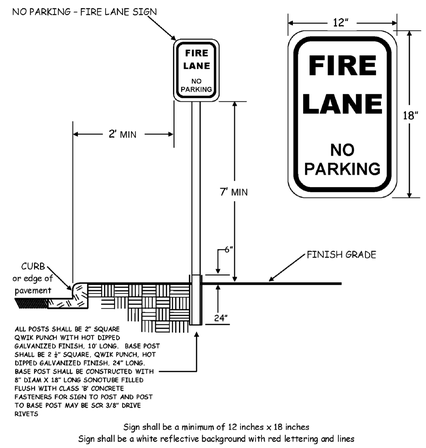
1. All workmanship and materials shall be in accordance with City standards and the most current copy of the State of Washington Standard Specifications for Road, Bridge and Municipal Construction (WSDOT/APWA) in that order.
2. Temporary erosion/water pollution measures shall be required in accordance with the Standard Specifications and the Drainage Design and Erosion Control Manual.
3. Applicant shall comply with all other permits and other requirements of the governing authority or agency.
4. A preconstruction meeting shall be held prior to the start of construction or staking of the site.
5. All storm mains and retention/detention areas shall be staked for grade and alignment by an engineering or survey firm licensed to perform such work.
6. Storm drain pipe shall be as specified in the Drainage Design and Erosion Control Manual.
7. Special structures, oil/water separators, and outlet controls shall be installed per plans and manufacturer's recommendations.
8. Provide traffic control plan(s) as required in accordance with MUTCD.
9. Call underground locate line 811 minimum 48 hours prior to any excavations.
10. 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 by the State of Washington.
11. The minimum staking of storm sewer systems shall be as follows:
    A. Stake location of all catch basins/manholes and other fixtures for grade and alignment.
    B. Stake location, size, and depth of retention/detention facility.
    C. Stake finished grade of all stormwater features, including but not limited to catch basin/manhole rim elevations, overflow structures, weirs, and invert elevations of all pipes in catch basins, manholes, and those pipes that daylight.
12. Pipe materials used for stormwater conveyance shall be as acceptable by the City. Pipe size, slope, cover, etc., shall be as specified in Volume III of the Drainage Design and Erosion Control Manual.
13. All driveway culverts shall be of sufficient length to provide a minimum 3:1 slope from the edge of the driveway to the bottom of the ditch. Culverts shall have beveled and sections to match the side slope.
14. If drainage outlets (stub-outs) are to be provided for each individual lot, the stub-outs shall conform to the following:
    A. Each outlet shall be suitably located at the lowest elevation on the lot, so as to service all future roof downspouts and footing drains, driveways, yard drains, and any other surface or subsurface drains necessary to render the lots suitable for their intended use. Each outlet shall have free-flowing, positive drainage to an acceptable storm water conveyance system or to an acceptable outfall location.
    B. Outlets on each lot shall be located with a 5-foot-high, 2"x4" stake marked "storm" or "drain." The stub-out shall visibly extend above surface level and be secured to the stake.
    C. Pipe material shall be as acceptable to the City of Tumwater.
    D. Drainage easements are required for drainage systems designed to convey flows through individual lots.
    E. The developer and/or contractor is responsible for coordinating the locations of all stub-out conveyance lines with respect to the utilities (e.g., power, gas, telephone, television).
    F. All individual stub-outs shall be privately owned and maintained by the lot home owner.
15. The storm drainage system shall be constructed according to accepted plans on file with the County. Any material deviation from the plans will require written acceptance from the City. Any material deviation from the plans will require written acceptance from the City.
14. A copy of the accepted storm water plans must be on the job site whenever construction is in progress.
16. All disturbed areas shall be seeded and mulched or similarly stabilized to the satisfaction of the City. For sites where grass has been planted through hydroseeding, the performance bond will not be released until the grass has been thoroughly established (90% establishment), unless otherwise approved by the County.
16. All building downspouts on commercial sites shall be connected to the storm drainage system, unless otherwise acceptable to the City.
18. All erosion control and stormwater facilities shall be regularly inspected and maintained by the contractor during the construction phase of the development project.
19. The contractor shall be responsible for providing adequate safeguards, safety devices, protective equipment, flaggers, and any other needed actions to protect the life, health, and safety of the public, and to protect property in connection with the performance of work covered by the contract. Any work within the traveled right-of-way that may interrupt normal traffic flow shall require at least one flagger for each lane of traffic affected. All sections of the current WSDOT Standard Specifications for Traffic Control shall apply.
20. It shall be the sole responsibility of the contractor to obtain street use and other related or required permits prior to any construction activity in the jurisdiction's right-of-way. It shall also be the responsibility of the contractor to obtain all required permits prior to any construction.
21. No final cut or fill slope shall exceed two (2) horizontal to one (1) vertical without stabilization by rockery or by a structural retaining wall.
22. The project engineer shall verify the locations, widths, thicknesses, and elevations of all existing pavements and structures, including utilities and other frontage improvements, that are to interface with new work, provide all trimming, cutting, saw cutting, grading, leveling, sloping, coating, and other work, including materials as necessary to cause the interface with existing works to be proper, without conflict, acceptable to the engineer and the City of Tumwater, complete in place, and ready to use.
23. Compaction of all fill areas shall be per current APWA specifications. Fill shall be provided in 6 inch maximum lifts and shall be compacted to 95 percent of its maximum relative density.

CITY OF TUMWATER
COMMUNITY DEVELOPMENT
555 ISRAEL RD. SW, TUMWATER, WA 98501
(360) 754-4180 (360) 754-4126 (FAX)
Email: cd@ci.tumwater.wa.us

NO PARKING – FIRE LANE SIGN

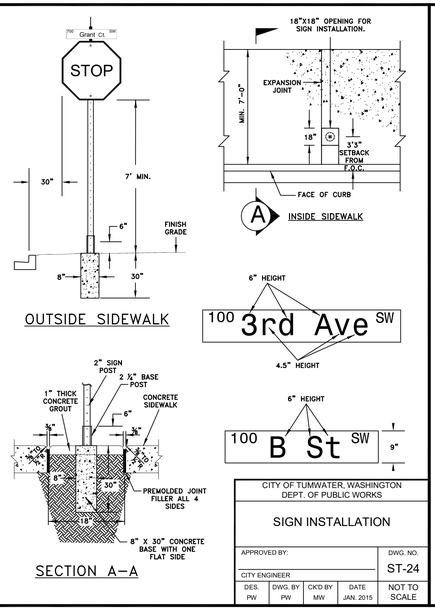
POLICY 96.02 – DETAIL NO. 2

ALL SIGNS SHALL MEET REQUIREMENTS OF THE MUTCD. LATEST EDITION.



Sign shall be a minimum of 12 inches x 18 inches
Sign shall be a white reflective background with red lettering and lines

Updated 2/2/2015



CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS

SIGN INSTALLATION

APPROVED BY:				DWG. NO.
CITY ENGINEER				ST-24
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE

SIGN INSTALLATION DETAIL

A. ALL SIGNS SHALL MEET REQUIREMENTS OF THE MUTCD, LATEST EDITION.

ALL STREET NAME SIGNS SHALL BE 9" TALL AND HAVE EXTRUDED BLADE EDGES.
ALL SIGN SHEETING, WITH THE EXCEPTION OF CROSSWALK SIGNS, SHALL BE 3M HIGH INTENSITY PRISMATIC SHEETING WITH THE FOLLOWING SERIES NUMBER: WHITE-3930, YELLOW-3931, RED-3932, ORANGE-3934, BLUE-3935, GREEN-3937 OR BROWN-3939.
IF A REVERSE LAY PROCESS IS USED, 3M ELECTROCUT FILM SHALL BE USED WITH THE FOLLOWING SERIES NUMBER: YELLOW-1171, RED-1172, ORANGE-1174, BLUE-1175 , GREEN-1177, BLACK-1178 OR BROWN-1179.

CROSSWALK SIGNS SHALL BE 3M DIAMOND GRADE DG3 SHEETING SERIES 4083 FLUORESCENT YELLOW-GREEN.

ALL SIGNS, WITH THE EXCEPTION OF STREET NAME, SHALL BE COVERED WITH 3M GRAFFITI FILM SERIES 1160.

ALL PUBLIC STREET NAME SIGNS WILL HAVE A GREEN BACKGROUND.

NO BORDERS SHALL BE ALLOWED ON STREET NAME SIGNS.

ALL PRIVATE STREET NAME SIGNS WILL HAVE BLUE BACKGROUND.

PUBLIC STREET NAME SIGN SHALL BE ON TOP AND PRIVATE ON THE BOTTOM.

ALL STREET NAME SIGNS SHALL INCLUDE 3.5" TALL BLOCK NUMBERS IN THE UPPER LEFT HAND CORNER (AVAILABLE FROM THE BUILDING OFFICIAL IN THE COMMUNITY DEVELOPMENT DEPARTMENT). S.E. OR S.W. DIRECTION IN THE UPPER RIGHT HAND CORNER AND SUFFIX SUCH AS "St OR "Rd" USING THE UNITED STATES POSTAL SERVICE STANDARD SUFFIX ABBREVIATION.

STREET NAME SIGNS SHALL BE MOUNTED TO THE POST USING A 12" LONG, EXTRUDED BLADE SIGN CROSS AND/OR A 12" LONG, SQUARE TOP, EXTRUDED BLADE SIGN BRACKET.

B. ALL SIGNS SHALL BE MOUNTED TO 2" TELESPAR SIGN SUPPORTS WITH HOT-DIPPED GALVANIZED FINISH, PRE-PUNCHED POSTS, LONG ENOUGH TO ACCOMMODATE 2' INTO THE BASE AND STILL ACHIEVE A MINIMUM SIGN HEIGHT OF 7'.

C. BASE POST SHALL BE 36" LONG AND PRECAST IN AN 8" DIAMETER, 30" LONG, CONCRETE BASE. ONE SIDE FLAT TO PREVENT SIGN ROTATION IN GROUND ONCE INSTALLED. POST WILL NEED TO SLIDE IN THE ENTIRE LENGTH OF THE BASE POST FOR SIGN HEIGHT ADJUSTMENT. ANY SIGN BASE INSTALLED UNDER CONCRETE SHALL UTILIZE A "HOA" (HEAVY DUTY ANCHOR) BASE SLEEVE OF 7 GAUGE SOLID WALL, TWO-HOLE ANCHOR FOR THE TELESPAR POSTS.

D. FASTENERS FOR SIGN TO POST WILL BE 3/8" ALUMINUM DRIVE RIVETS WITH NYLON BACK SPACER. FASTENERS FOR POST TO BASE WILL BE 3/8" DRIVE RIVETS ONLY. NO BOLTS, NUTS, SCREWS OR OTHER FASTENERS ARE ACCEPTABLE.

E. MATERIALS MAY BE ACQUIRED AT, BUT ARE NOT LIMITED TO

ZUMAR INDUSTRIES, 12015 STEELE ST. S, TACOMA, WA 98445. 1-800-426-7967
TRAFFIC SAFETY SUPPLY CO., 2324 SE UMATILLA ST., PORTLAND, OR 97202. 1-800-547-8518
PACIFIC COAST PRECAST, 4926 SHINGKE RD. NE OLYMPIA, WA. 98506. 360-352-0142

F. TREES AND LANDSCAPING SHALL BE PLANTED AT LEAST 30' AWAY FROM SIGNS TO GIVE ADEQUATE ADVANCED SIGN VISIBILITY.

ANY QUESTIONS SHOULD BE DIRECTED TO THE CITY OF TUMWATER SIGN SHOP @ 360-754-4150

CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS

SIGN INSTALLATION NOTES

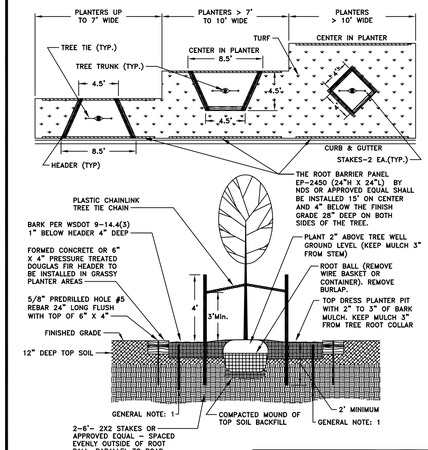
APPROVED BY:				DWG. NO.
CITY ENGINEER				ST-25
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:25:04 PM

Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:28:15 PM

Community Development Department
Al Christensen, CBO Building/Fire Safety Official

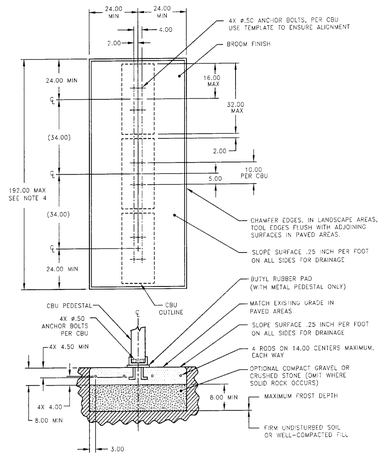


CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS

TREE PLANTER AND BARRIER IN PLANTER STRIP

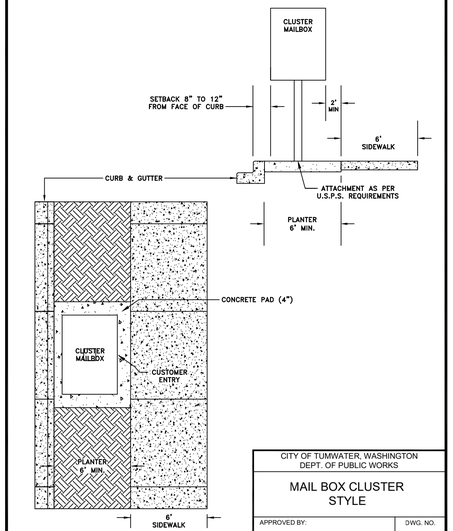
APPROVED BY:				DWG. NO.
CITY ENGINEER				ST-23
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE

USPS APPROVED SPECIFICATIONS – CONCRETE PAD (MULTIPLE UNIT)



NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS, CONTAIN 4% MIN – 6% MAX AIR ENTRAINMENT AND BE PLACED WITH A 3.50 – 4.50 SLUMP IN ACCORDANCE WITH ACI 301.
2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615, GRADE 60.
3. ANCHOR BOLTS SHALL CONFORM TO ASTM A193, GRADE B8M, TYPE 316 STAINLESS STEEL.
4. A 3 CBU CONFIGURATION IS DEPICTED. A 2 OR 4 CBU CONFIGURATION MAY BE USED AS LONG AS THEY ARE ARRANGED IN GROUPS SUCH THAT THE OVERALL DIMENSION OF THE CONCRETE BASE DOES NOT EXCEED 192 INCHES.

16



CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS

MAIL BOX CLUSTER STYLE

APPROVED BY:				DWG. NO.
CITY ENGINEER				ST-16
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM–18–1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT

CITY OF TUMWATER WA

ROADWAY DETAILS AND NOTES

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/28/19

8/26/19
CHRISTOPHER R. MEEK
STATE OF WASHINGTON
37401
REGISTERED
PROFESSIONAL ENGINEER

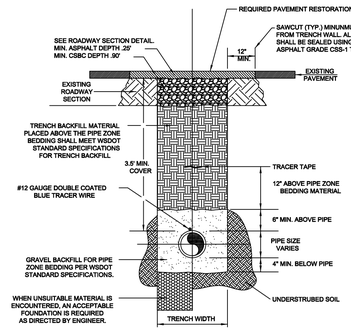
PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
OLYMPIC ENGINEERING
Civil Engineering - Land Planning - Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_RDDT2

C2.5
SHEET: 8 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.

07/15/16



MAXIUM TRENCH WIDTH AT TOP OF PIPE:
I.D. PLUS 30" FOR PIPE 15" AND UNDER.
(1.5X.I.D.) PLUS 18" FOR PIPE 18" AND OVER.

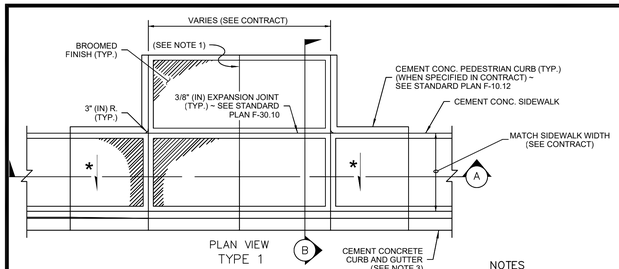
GENERAL NOTES:

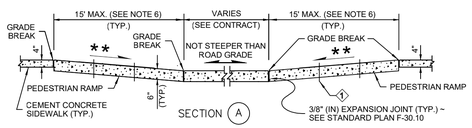
1. COMPACTION: THE TESTING REQUIREMENTS SHALL BE PER THE CITY OF TUMWATER DEVELOPMENT GUIDELINES AND PUBLIC WORKS STANDARDS.
2. ALL MATERIALS, WORKMANSHIP, AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION OR AS AMENDED BY CITY OF TUMWATER STANDARDS.

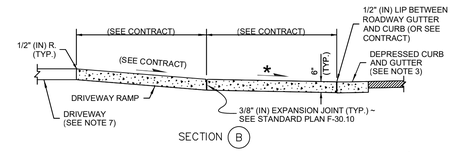
CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS

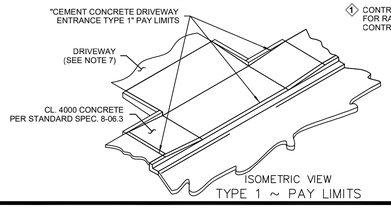
WATER TRENCH DETAIL
PAVED AREAS

APPROVED BY:				DWG. NO.
CITY ENGINEER				WA-5
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	KMC	JUNE 2014	





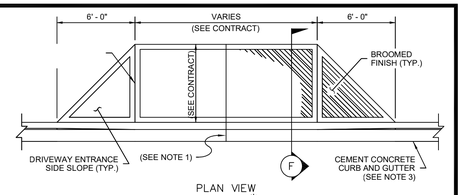




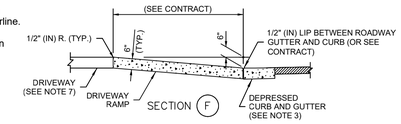
NOTES

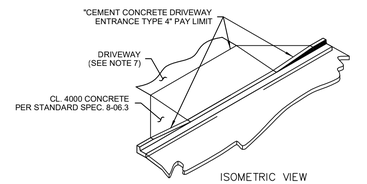
1. When the driveway width exceeds 15' (ft), construct a full depth expansion joint with 3/8" (in) joint filler along the driveway centerline. See Standard Plan F-30.10. Construct expansion joints parallel with the centerline as required at 15' (ft) maximum spacing when driveway widths exceed 30' (ft).
2. See Standard Plan F-30.10 for sidewalk details.
3. Curb and Gutter shown; see the Contract Plans for the curb design specified. See Standard Plan F-10.12 for Curb Details.
4. Avoid placing drainage structures, junction boxes or other obstructions in front of driveway entrances.
5. Where "GRADE BREAK" is called out, the entire length of the line between the two adjacent surface planes shall be flush.
6. The Pedestrian Ramp length is not required to exceed15 feet (unless otherwise shown in the Contract Plans). When applying the 15-foot max. length (measured from back of sidewalk) the running slope of the pedestrian ramp is allowed to exceed 8.3%. Use a single constant slope from bottom of ramp to top of ramp to match into the sidewalk over a horizontal distance of 15 feet.
7. Beyond limits shown. Pay item does not include driveway. See Contract Plans.

1 CONTRACTION JOINT (TYP.) ~ SEE STANDARD PLAN F-30.10 FOR RAMP LENGTHS GREATER THAN 8' - 0" PROVIDE CONTRACTION JOINT EQUALLY SPACED 4' - 0" MIN. OC.



*THIS ENTRANCE TYPE SHALL NOT BE USED ALONG A PEDESTRIAN ROUTE





CEMENT CONCRETE
DRIVEWAY ENTRANCE
TYPES 1 & 4
F-80.10-4

CITY OF TUMWATER

APPROVED

PERMIT #: TUM-19-0854

08/26/20192:25:26 PM

Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM-18-1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT

CITY OF TUMWATER WA

ROADWAY DETAILS AND NOTES

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/28/19

8/26/19
CHRISTOPHER M. MACEK
STATE OF WASHINGTON
37401
REGISTERED PROFESSIONAL ENGINEER

PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
OLYMPIC ENGINEERING
Civil Engineering - Land Planning - Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_RDDT3

C2.6

SHEET: 9 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.

GENERAL NOTES (STREET LIGHT CONSTRUCTION)

1. ALL WORKMANSHIP, MATERIALS AND TESTING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT WASHINGTON STATE DEPARTMENT OF TRANSPORTATION/AMERICAN PUBLIC WORK ASSOCIATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, NATIONAL ELECTRICAL CODE AND CITY OF TUMWATER DEVELOPMENT GUIDE MANUAL UNLESS OTHERWISE SPECIFIED BELOW. IN CASES OF CONFLICT, THE MOST STRINGENT GUIDELINE SHALL APPLY. WHEN THE MOST STRINGENT GUIDELINE IS NOT CLEAR, THE CITY ENGINEER WILL MAKE THE DETERMINATION. THE ELECTRICAL CONTRACTOR SHALL BE FAMILIAR WITH ALL ABOVE-STATED PUBLICATIONS AND GUIDELINES AS THEY WILL BE STRICTLY ENFORCED BY THE
2. ALL SAFETY STANDARDS AND REQUIREMENTS SHALL BE COMPLIED WITH AS SET FORTH BY THE STATE OF WASHINGTON, DEPARTMENT OF LABOR AND INDUSTRIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PRIOR TO DISRUPTION OF ANY TRAFFIC. TRAFFIC CONTROL PLANS SHALL BE PREPARED AND SUBMITTED TO THE CITY OF APPROVAL. (SEE WSDOT STANDARD PLANS K2-K21.) NO WORK SHALL COMMENCE UNTIL ALL APPROVED TRAFFIC CONTROL IS IN PLACE.
4. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE CITY OF TUMWATER PRIOR TO THE START OF CONSTRUCTION. CONTACT THE DEVELOPMENT SERVICES DEPARTMENT TO SCHEDULE A MEETING.
5. ALL APPROVALS AND PERMITS REQUIRED BY THE CITY OF TUMWATER SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A COPY OF AN APPROVED SET OF PLANS ON THE CONSTRUCTION SITE AT ALL TIMES.
7. ALL PROJECT STAKING SHALL BE PERFORMED BY QUALIFIED SURVEY PERSONNEL WORKING UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR OR PROFESSIONAL CIVIL ENGINEER LICENSED BY THE STATE OF WASHINGTON. IN CASES WHERE THE WORK INCLUDES THE SETTING OR PERPETUATION OF STREET MONUMENTATION, THE SETTING OR REPLACEMENT OF LAND CORNERS, OR ANY OTHER WORK REQUIRING THE SERVICES OF A PROFESSIONAL LAND SURVEYOR AS DEFINED BY THE LAWS OF THE STATE OF WASHINGTON, SAID WORK SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF WASHINGTON.
8. TEMPORARY EROSION CONTROL/WATER POLLUTION MEASURES SHALL BE REQUIRED IN ACCORDANCE WITH THE 2018 DRAINAGE DESIGN AND EROSION CONTROL MANUAL.
9. IF CONSTRUCTION IS TO TAKE PLACE IN THE COUNTY RIGHT-OF-WAY, THE CONTRACTOR SHALL NOTIFY THE COUNTY AND OBTAIN ALL THE REQUIRED APPROVALS AND PERMITS.
10. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR MAINTAINING ALL LOCATE MARKS ONCE THE UTILITIES HAVE BEEN LOCATED.
11. ELECTRICAL PERMITS AND INSPECTIONS ARE REQUIRED FOR ALL STREET LIGHTING INSTALLATIONS WITHIN THE CITY OF TUMWATER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING SAID PERMITS PRIOR TO ANY TYPE OF ACTUAL CONSTRUCTION. THESE PERMITS ARE AVAILABLE FROM THE WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES ELECTRICAL SAFETY DIVISION.
12. PRIOR TO INSTALLATION OF ANY MATERIALS, THE ELECTRICAL CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE CITY TWO COPIES OF MATERIAL CATALOG CUTS, SPECIFICATIONS, SHOP DRAWINGS AND/OR WIRING DIAGRAMS. ANY MATERIALS PURCHASED OR LABOR PERFORMED PRIOR TO SUCH APPROVAL SHALL BE AT THE CONTRACTOR'S RISK. THE MOUNTING HEIGHTS, ARM LENGTH, POWER SOURCE, LUMINAIRE TYPE AND BOLT PATTERNS SHALL FOLLOW CITY OF TUMWATER DEVELOPMENT GUIDE MANUAL SECTION 4.31. MODIFICATIONS OF ANY PORTION OF AN EXISTING LIGHTING SYSTEM WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL BY THE CITY.
13. A RATED SERVICE DISCONNECT SHALL BE PROVIDED FOR EVERY BRANCH CIRCUIT. LIGHT BRANCH CIRCUIT BREAKERS SHALL BE 40 AMP MINIMUM. THE LOCATION AND INSTALLATION OF THE DISCONNECT SHALL CONFORM TO THE NATIONAL ELECTRIC CODE (NEC) AND CITY OF TUMWATER STANDARDS. THE SERVICE DISCONNECT SHALL HAVE 120/240 VAC, CALTRANS TYPE 3B OR CITY APPROVED EQUAL, WITH TWO LIGHTING RELAYS, ONE THREE POSITION TEST SWITCH (AUTO/OFF/MANUAL) AND ONE PHOTOCELL. THE PHOTOCELL SHALL FACE NORTH UNLESS OTHERWISE DIRECTED BY THE CITY. (SEE GUIDELINE DRAWING ST-23.)
14. SERVICE ENTRANCE CONDUCTORS SHALL BE A MINIMUM SIZE OF #2 COPPER. ALL LIGHTING WIRE SHALL BE STRANDED COPPER WITH A MINIMUM SIZE OF #8 WITH INSULATION SUITABLE FOR WET LOCATIONS. PHASING TAPE WILL NOT BE ALLOWED. ALL WIRE SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT WITH A MINIMUM DIAMETER OF 1-1/4 INCHES. ALL CONDUIT SHALL BE INSTALLED IN THE "UTILITY DITCH" OR AS OTHERWISE DIRECTED BY THE CITY. A BUSHING OR BELL END SHALL BE USED AT THE END OF EVERY CONDUIT. ALL SPLICES SHALL BE IN THE NEAREST JUNCTION BOX. WIRE NUTS WILL NOT BE ALLOWED. ALL SPLICES WILL BE MADE WITH TYPE C COPPER FITTINGS, CENTERED AND ENCASED IN A 3-M SCOTCHCAST EPOXY KIT, RATED AT 600 VOLTS, TYPE 82-A1-82-B1 OR CITY APPROVED EQUAL. IF MORE THAN ONE CIRCUIT PASSES THROUGH A JUNCTION BOX EACH IS TO HAVE A PVC SLEEVE CLEARLY IDENTIFYING THE CIRCUIT. (WSDOT STANDARD SPECIFICATION 8-20.3). A 500 VOLT MEGGER TEST WILL BE PERFORMED BY THE CITY ON EACH CIRCUIT BETWEEN CONDUCTOR AND GROUND PRIOR TO ACCEPTANCE OF THE LIGHTING SYSTEM. THE INSULATION RESISTANCE SHALL NOT BE LESS THAN 6 MEGAOHMS TO GROUND 2,500 FEET AND OVER NOR LESS THAN 8 MEGAOHMS UNDER 2,500 FEET. A FUNCTIONAL TEST WILL BE PERFORMED BY THE CITY, IN WHICH IT IS DEMONSTRATED THAT EACH AND EVERY PART OF THE SYSTEM FUNCTIONS AS SPECIFIED OR INTENDED HEREIN. (WSDOT STANDARD SPECIFICATIONS 8-20.3(11).
15. EACH LUMINAIRE POLE SHALL HAVE AN IN-LINE, FUSED WATERTIGHT ELECTRICAL DISCONNECT LOCATED AT THE BASE OF THE POLE. ACCESS TO THESE FUSED DISCONNECTS SHALL BE THROUGH THE HAND-HOLE ON THE POLE. THE HAND-HOLE SHALL BE FACING AWAY FROM ONCOMING TRAFFIC. LOAD SIDE OF IN-LINE FUSE TO LUMINAIRE HEAD SHALL BE CABLE AND POLE BRACKET WIRE, 2 CONDUCTOR, 19 STRAND COPPER #10 AND SHALL BE SUPPORTED AT THE END OF THE LUMINAIRE ARM BY AN APPROVED MEANS. FUSE SIZE, DISCONNECT INSTALLATION AND GROUNDING IN POLE SHALL CONFORM TO WSDOT STANDARDS.
16. CITY APPROVED PULL BOXES OR JUNCTION BOXES SHALL BE INSTALLED PER WSDOT STANDARD PLAN J-11a IN ALL STREET LIGHTING INSTALLATIONS. JUNCTION BOXES SHALL BE INCORPORATED INTO THE BACK EDGE OF SIDEWALK OR AS DIRECTED BY CITY. WHERE NO SIDEWALK EXISTS, JUNCTION BOXES SHALL HAVE A CONCRETE PAD PER TUMWATER DRAWING ST-22. NO CONDUIT RUN SHALL BE MORE THAN 200 FEET BETWEEN JUNCTION BOXES. A JUNCTION BOX SHALL BE LOCATED WITHIN 10 FEET OF EACH LUMINAIRE POLE AND AT EVERY ROAD CROSSING. NO CONDUIT SHALL BE INSTALLED IN THE ROADWAY EXCEPT AT DESIGNATED ROAD CROSSINGS. CONDUIT ENTERING THE JUNCTION BOX SHALL BE PERPENDICULAR TO THE SIDES OF THE BOX AND A MINIMUM OF 6 BUT NO MORE THAN 8 INCHES BELOW THE LID. BOXES SHALL BE CLEARLY AND INDELIBLY MARKED AS LIGHTING BOXES BY THE LEGEND "L.T." OR "LIGHTING". ALL J-BOXES SHALL BE SUPPORTED BY A MINIMUM 6 INCH CRUSHED GRAVEL PAD. A 3/8 INCH EXPANSION JOINT SHALL BE INSTALLED BETWEEN CONCRETE SIDEWALK AND JUNCTION BOX.
17. ALL LIGHTING POLES SHALL BE AS SPECIFIED IN SECTION 4.31 OF THE DEVELOPMENT GUIDE MANUAL. IN EXISTING DEVELOPED AREAS, THE CITY MAY REQUIRE THE USE OF OTHER POLES TO ESTABLISH UNIFORMITY WITHIN THE DEVELOPED AREA. AFTER INSTALLATION AND BEFORE ACCEPTANCE BY THE CITY, ALL POLES SHALL BE FREE OF DENTS AND MARKS. SONOTUBE SHALL BE REMOVED TO BELOW GROUND LEVEL. POLE BASES SHALL BE GROUTED AND LUMINAIRE HEADS SHALL BE PLUMB AND LEVEL.
18. CEMENT CONCRETE BASES SHALL FOLLOW CITY OF TUMWATER DEVELOPMENT GUIDE MANUAL DRAWING ST-25 LUMINAIRE FOUNDATION DETAIL. CONDUIT SHALL EXTEND BETWEEN 3 AND 6 INCHES ABOVE THE CONCRETE BASE.
19. ANY MODIFICATION TO APPROVED LIGHTING PLANS SHALL BE REVIEWED AND APPROVED BY THE CITY PRIOR TO INSTALLATION. ANY APPROVED MODIFICATIONS SHALL BE SHOWN ON A MYLAR ASBUILT SUPPLIED TO THE CITY AFTER THE LIGHTING INSTALLATION IS COMPLETED AND BEFORE FINAL ACCEPTANCE. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO ENSURE THESE ASBUILTS ARE PROVIDED TO THE CITY.

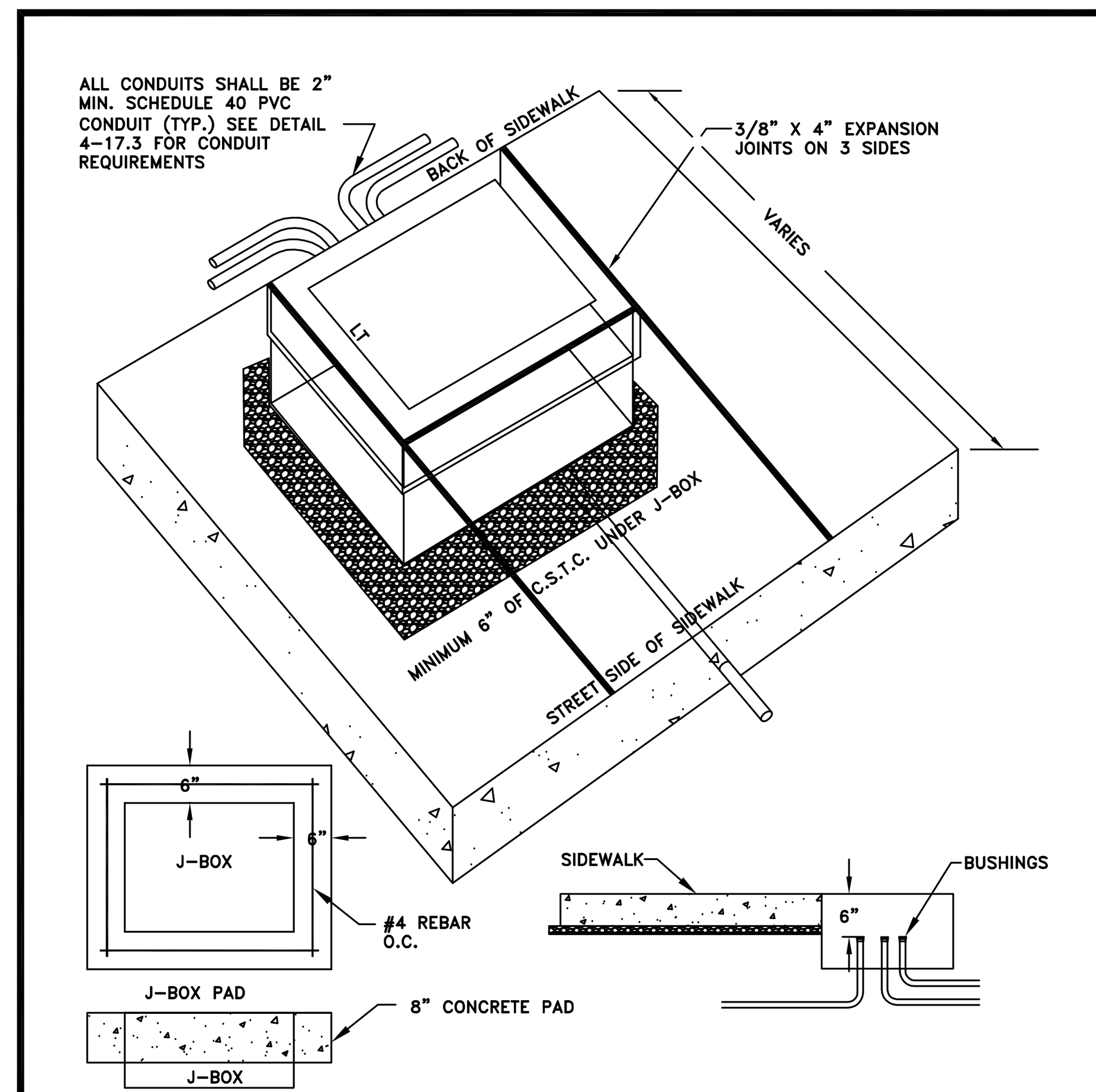
APPROVED

PERMIT #: TUM-19-0854

08/26/20192:25:48 PM

CITY OF TUMWATER

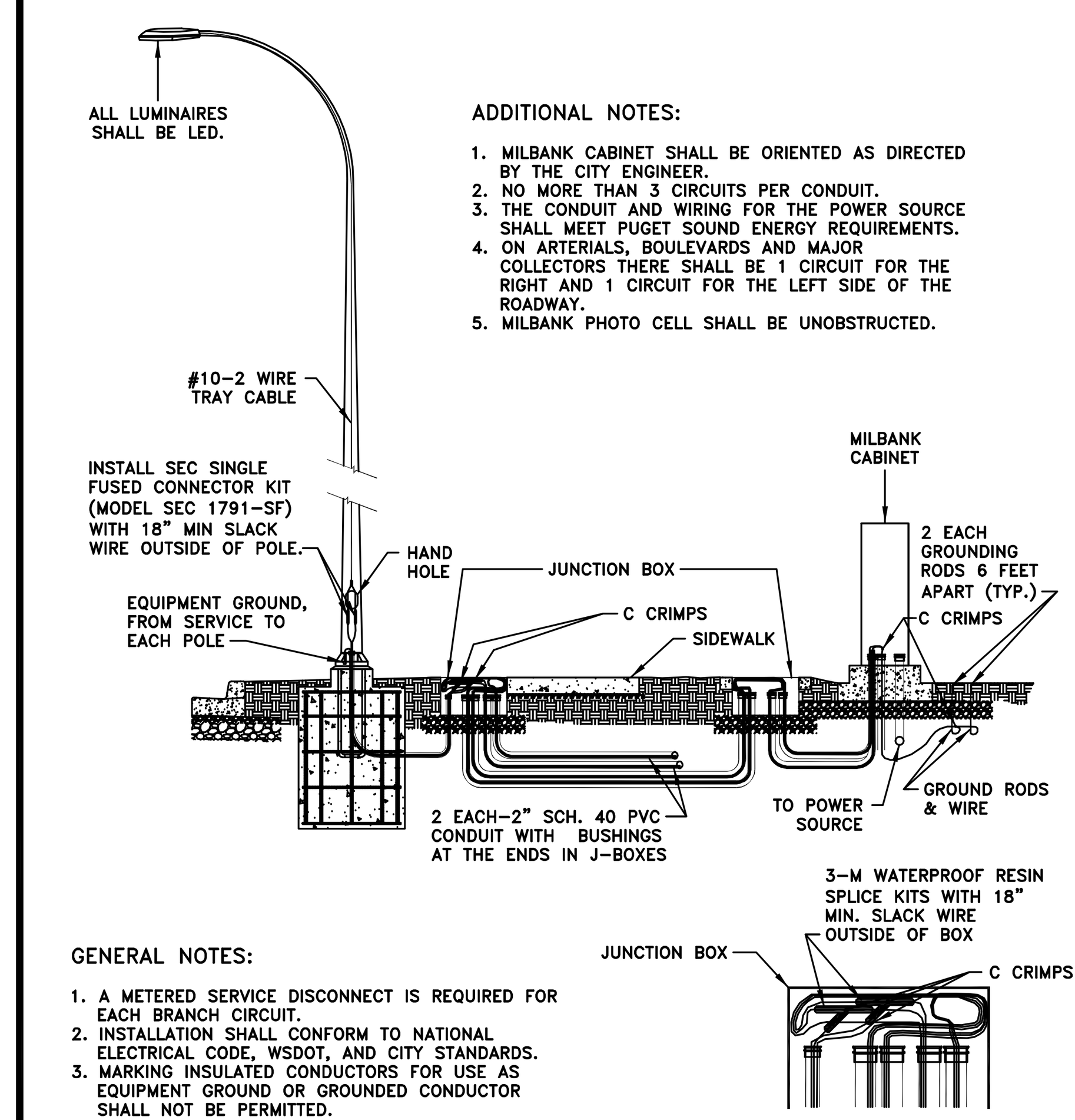
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above



GENERAL NOTES:

1. SEE W.S.D.O.T. STANDARD PLAN J-11a FOR J-BOX TYPE AND SIZE.
2. ALL LIDS SHALL BE STEEL AND MARKED WITH LT OR TS PER W.S.D.O.T. STANDARD PLAN J-11a.
3. IF NO SIDEWALK EXISTS, A CONCRETE PAD SHALL BE CONSTRUCTED 6" THICK, 6" WIDE, COMPLETELY SURROUNDING THE J-BOX WITH ONE #4 REBAR ON CENTER EACH SIDE AND TIED AT CORNERS.
4. CONDUIT RUNS SHALL NOT EXCEED 200 FEET BETWEEN JUNCTION BOXES.
5. THIS J-BOX INSTALLATION SHALL ONLY BE USED WHEN THE FRONT OF THE SIDEWALK INSTALLATION IS NOT POSSIBLE. SEE DETAIL 4-17.4
6. SPARE 2" CONDUIT REQUIRED ON ARTERIALS, COLLECTORS AND RESIDENTIAL STREETS.

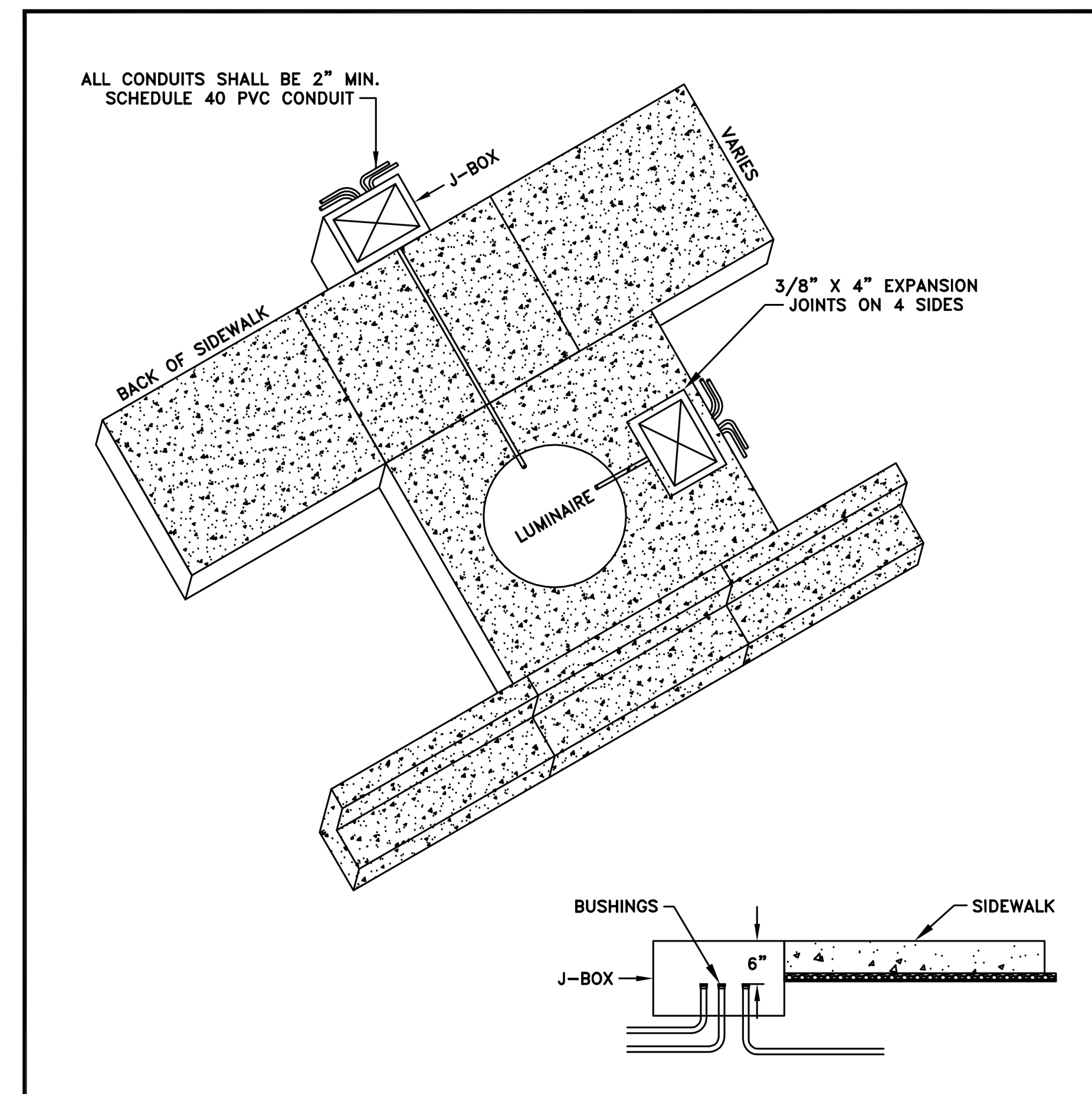
CITY OF TUMWATER, WASHINGTON DEPT. OF PUBLIC WORKS				
J-BOX				
APPROVED BY: CITY ENGINEER				DWG. NO. ST-9
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE



GENERAL NOTES:

1. A METERED SERVICE DISCONNECT IS REQUIRED FOR EACH BRANCH CIRCUIT.
2. INSTALLATION SHALL CONFORM TO NATIONAL ELECTRICAL CODE, WSDOT, AND CITY STANDARDS.
3. MARKING INSULATED CONDUCTORS FOR USE AS EQUIPMENT GROUND OR GROUNDED CONDUCTOR SHALL NOT BE PERMITTED.
4. ALL WIRE SHALL BE INSTALLED IN CONDUIT AS SPECIFIED ABOVE.
5. ALL SPLICES SHALL BE MADE IN A JUNCTION BOX. WIRE NUTS SHALL NOT BE ALLOWED. SPLICES SHALL BE CENTERED AND ENCASED IN 3M WATERPROOF RESIN SPLICE KITS.
6. THE SERVICE DISCONNECT SHALL BE INSTALLED BEHIND THE SIDEWALK NEAR A PROPERTY LINE AND WHENEVER POSSIBLE IN AN OPEN SPACE. A J-BOX SHALL BE INSTALLED WITHIN 10' OF THE SERVICE DISCONNECT.
7. CURRENT CARRYING CONDUCTORS SHALL BE TYPE U.S.E. INSULATED, STRANDED, COPPER, MINIMUM #8 AWG. GROUND EQUIPMENT CONDUCTORS SHALL BE BARE STRANDED COPPER MINIMUM #8 AWG.

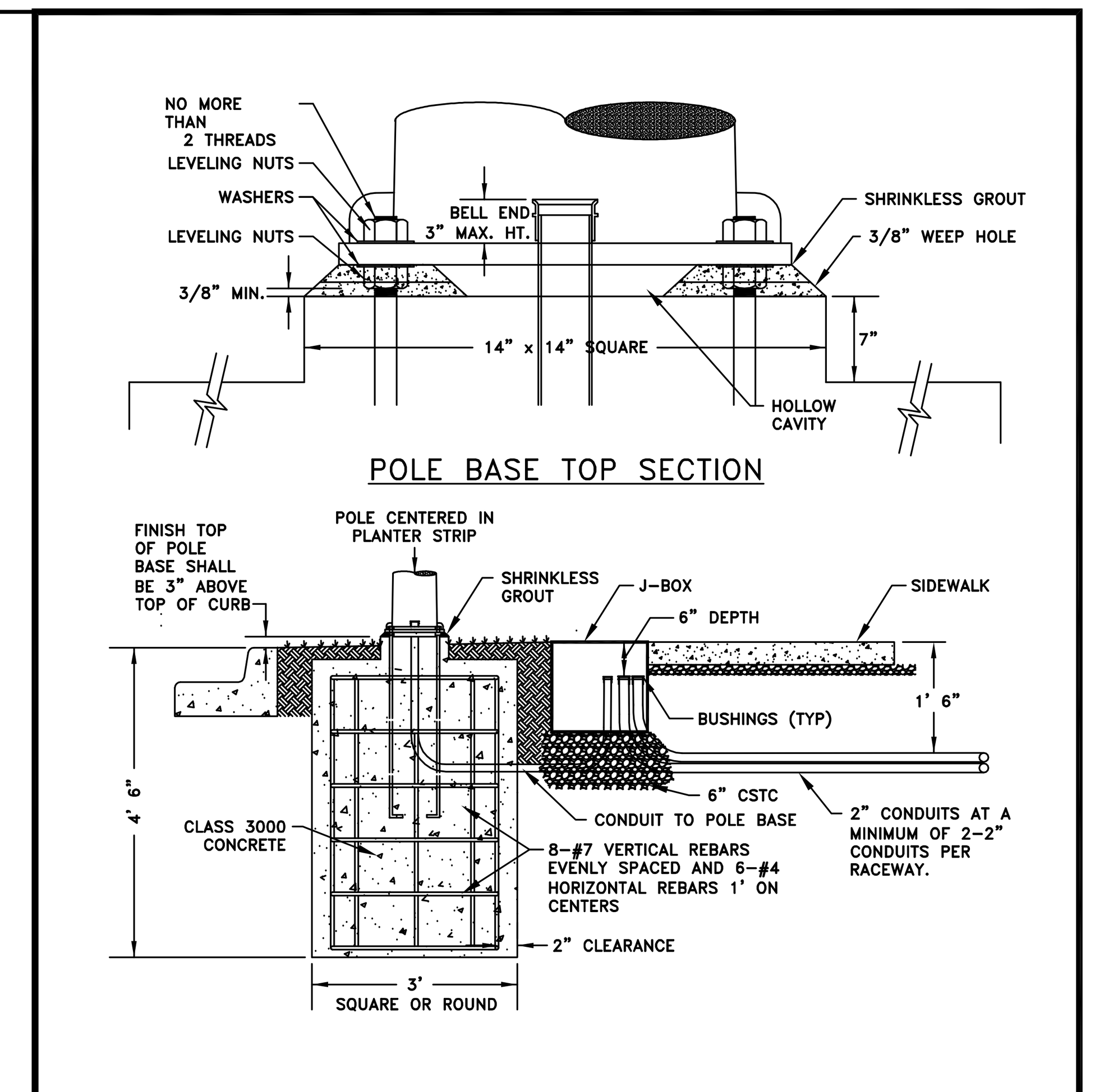
CITY OF TUMWATER, WASHINGTON DEPT. OF PUBLIC WORKS				
TYPICAL STREET LIGHT INSTALLATION				
APPROVED BY: CITY ENGINEER				DWG. NO. ST-12
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE



GENERAL NOTES:

1. SEE W.S.D.O.T. STANDARD PLAN FOR J-BOX TYPE AND SIZE.
2. ALL LIDS SHALL BE STEEL AND MARKED WITH LT OR TS.
3. IF NO SIDEWALK EXISTS, A CONCRETE PAD SHALL BE CONSTRUCTED 6" THICK, 6' WIDE, COMPLETELY SURROUNDING THE J-BOX WITH ONE #4 REBAR ON CENTER EACH SIDE AND TIED AT CORNERS.
4. CONDUIT RUNS SHALL NOT EXCEED 200 FEET BETWEEN JUNCTION BOXES.
5. SPARE 2" CONDUIT REQUIRED ON ALL RUNS.
6. AFTER FINIAL INSPECTION OF THE J-BOXES, THE LIDS SHALL BE WELDED IN PLACE WITH TWO 1.5" TO 2" LONG WELDS TO PREVENT REOPENING. WELDS SHALL BE IN THE MIDDLE OF THE LONGEST SIDES AND SHALL NOT AFFECT ANY GRAB HOLES OR LOCKING DEVICES.

CITY OF TUMWATER, WASHINGTON DEPT. OF PUBLIC WORKS				
J-BOX LOCATIONS				
APPROVED BY: CITY ENGINEER				DWG. NO. ST-13
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE



GENERAL NOTES:

1. THE FOUNDATION IS DESIGNED FOR 2000 PSF AVERAGE SOIL LATERAL BEARING PRESSURE.
2. BOLT PATTERN PER MANUFACTURER'S SPECIFICATIONS.
3. FOR DETAILS NOT SHOWN, USE MANUFACTURER'S SPECIFICATIONS AND DETAILS.
4. FOUNDATION HOLES SHALL BE AUGERED.

CITY OF TUMWATER, WASHINGTON DEPT. OF PUBLIC WORKS				
LUMINAIRE FOUNDATION				
APPROVED BY: CITY ENGINEER				DWG. NO. ST-14
DES. PW	DWG. BY PW	CK'D BY MW	DATE JAN. 2015	NOT TO SCALE

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM-18-1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT

CITY OF TUMWATER WA

STREET LIGHTING DETAILS AND NOTES

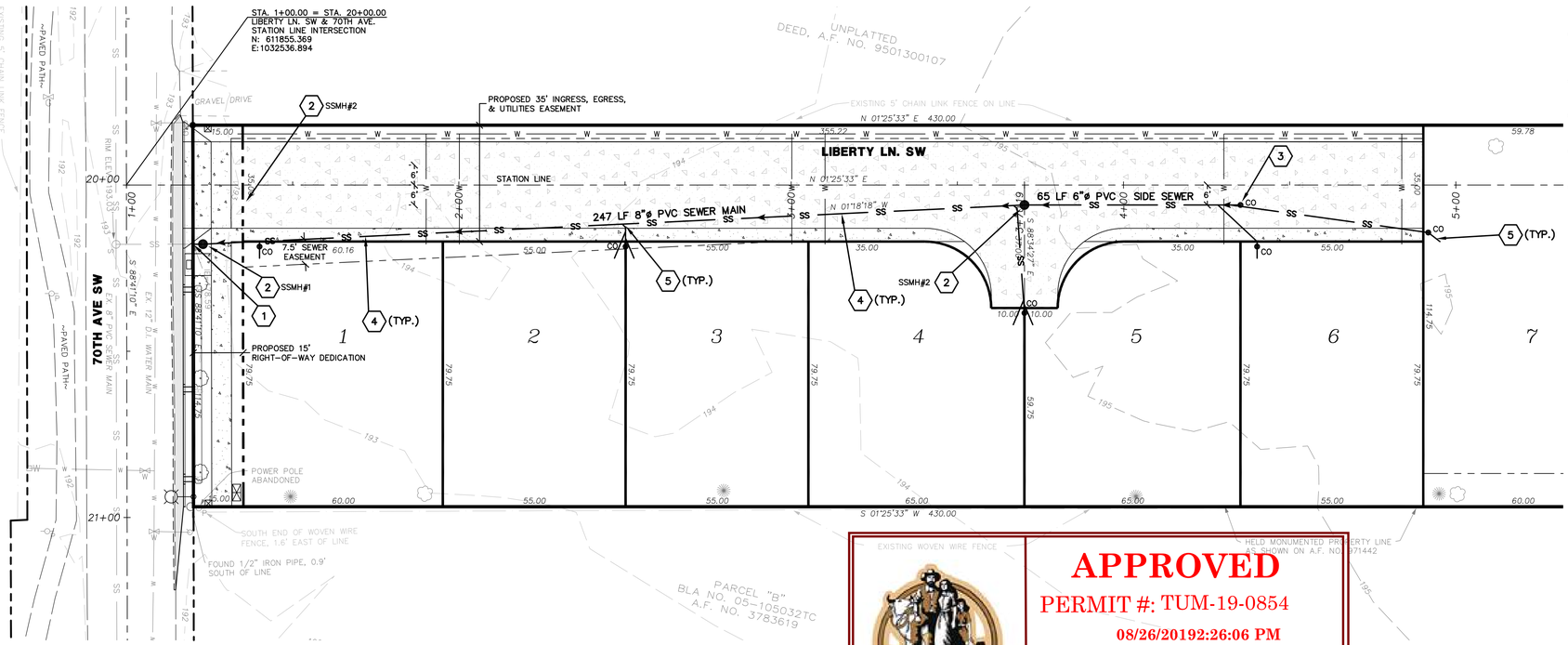
DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/28/19

CHRISTOPHER M. MERRITT, STATE OF WASHINGTON, 37401, PROFESSIONAL ENGINEER, 8/26/19

OLYMPIC ENGINEERING
PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_LTDT

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.



CONSTRUCTION NOTES

1. CONNECT TO EXISTING 8"ø PVC PIPE AND EXTEND ±1 LF 8"ø SDR35 PVC SEWER MAIN TO SSMH#1. MIN SLOPE = 0.004 FT/FT.
2. INSTALL 48"ø TYPE 1 MANHOLES PER PLAN AND PROFILE AND DETAILS ON SHEET C3.2.
3. INSTALL 6"ø CLEANOUT PER PLAN, PROFILE, AND DETAILS ON SHEET C3.2. SET PLUG 6" BELOW FINISHED GRADE.
4. INSTALL 8"ø SDR35 PVC SANITARY SEWER MAIN PER PLAN AND PROFILE. MIN. SLOPE = 0.004 FT/FT.
5. INSTALL 6"ø SDR35 PVC SANITARY SEWER SERVICE LATERALS PER PLAN, SCHEDULE, AND DETAILS ON SHEET C3.2. MIN. SLOPE = 0.01 FT/FT.

SANITARY SEWER SERVICE SCHEDULE

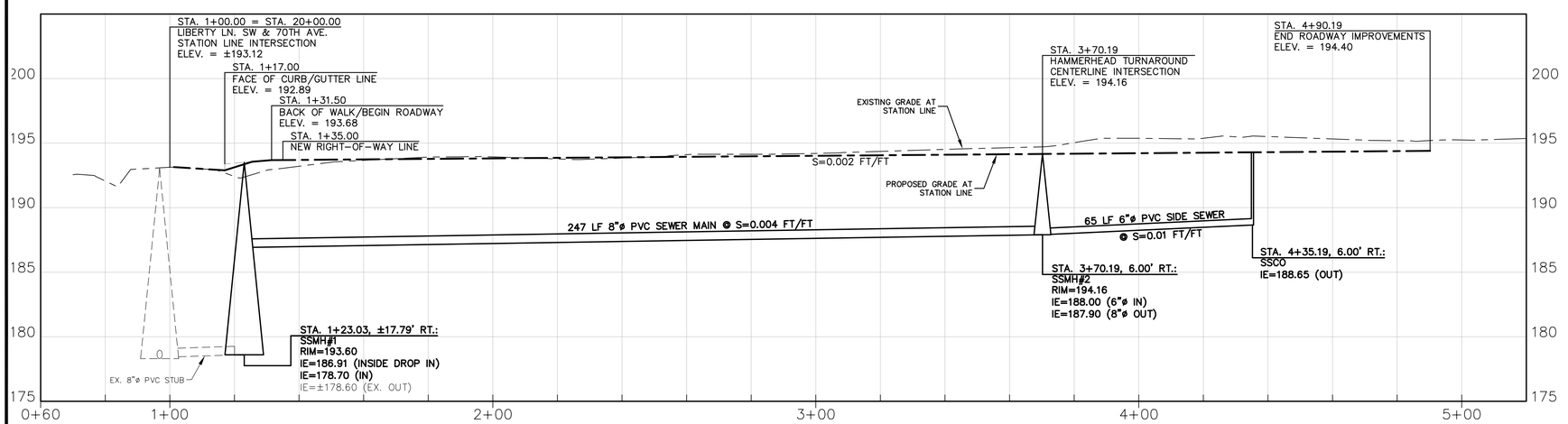
LOT	STATION & OFFSET	SERVICE TYPE
1	1+40.03, 17.00' RT.	SINGLE
2 & 3	2+50.19, 17.00' RT.	DOUBLE
4 & 5	3+70.19, 37.00' RT.	DOUBLE
6	4+40.00, 17.00' RT.	SINGLE
7	4+90.19, 13.12' RT.	SINGLE

STATION & OFFSET ARE AT LATERAL INTERSECTION WITH FUTURE PROPERTY LINES

GENERAL NOTES

1. DEFLECTION OF THE SANITARY SEWER MAIN IS NOT TO EXCEED MANUFACTURER'S SPECIFICATIONS.
2. PROVIDE TRENCH RESTORATION PER DETAIL ON SHEET C2.6. CDF MAY BE REQUIRED WITHIN THE CITY'S RIGHT-OF-WAY.
3. CONTRACTOR TO FIELD VERIFY EXACT LOCATION, PIPE TYPE, PIPE SIZE, AND DEPTH OF EXISTING SEWER LINE AT CONNECTION POINT PRIOR TO CONSTRUCTION START AND NOTIFY THE CITY AND DESIGN ENGINEER IMMEDIATELY IF THERE ARE ANY DISCREPANCIES OR CONFLICTS.
4. ALL WATER AND SANITARY SEWER CROSSINGS SHALL MEET WSDOE SEPARATION REQUIREMENTS. NO CONNECTIONS/FITTINGS ARE ALLOWED WITHIN THE CROSSING AREA.
5. ALL SEWER LINES FROM THE RIGHT-OF-WAY TO THE BUILDING SHALL BE INSTALLED PER THE UNIFORM PLUMBING CODE, CURRENTLY ADOPTED EDITION, AND SHALL BE INSPECTED BY THE CITY BUILDING INSPECTOR.
6. SEE DETAILS AND NOTES ON SHEET C3.2 FOR REFERENCE.

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:26:06 PM
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above



HORIZONTAL SCALE: 1"=20 FEET
VERTICAL SCALE: 1"=5.00 FEET

VERTICAL DATUM NGVD 29

BASIS OF VERTICAL DATUM:
THURSTON COUNTY CONTROL POINT NO. 1299, ELEV.=195.56' NGVD 29.

SCALE: 1"=20 FEET
0 10 20 40

BASIS OF MERIDIAN:
THURSTON COUNTY HIGH PRECISION NETWORK BASED ON THRUSTON COUNTY CONTROL POINT NO'S 1299 AND 566A = SOUTH 39° 36' 03" WEST.

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

TUM-18-1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT
CITY OF TUMWATER WA

LIBERTY LN. SW SANITARY SEWER PLAN AND PROFILE

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: 1" = 20'
DATE: 6/26/19

8/26/19
CHRISTOPHER M. HENRY
STATE OF WASHINGTON
37401
REGISTERED
PROFESSIONAL ENGINEER

OLYMPIC ENGINEERING
PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
Civil Engineering • Land Planning • Project Management

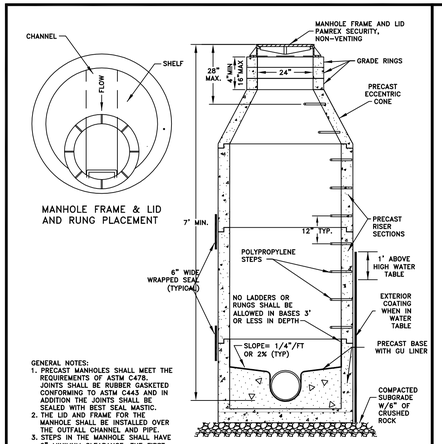
JOB NUMBER: 19002
DRAWING NAME: 19002_SSPL

C3.1
SHEET: 11 OF 12

PTN. OF NW 1/4 OF SE 1/4 OF SEC 4, TWP 17N, RGE 2W, W.M.

GENERAL NOTES (SANITARY SEWER MAIN INSTALLATION)

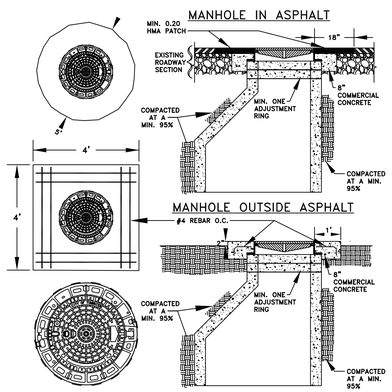
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CITY OF TUMWATER STANDARDS AND THE LATEST EDITION OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION (WSDOT/APWA).
2. CITY OF TUMWATER DATUM SHALL BE USED FOR ALL VERTICAL CONTROL. A BENCHMARK LIST IS AVAILABLE FROM THE PUBLIC WORKS DEPARTMENT.
3. ALL APPROVALS AND PERMITS REQUIRED BY THE CITY OF TUMWATER SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. IF CONSTRUCTION IS TO TAKE PLACE IN THE COUNTY RIGHT-OF-WAY, THE CONTRACTOR SHALL NOTIFY THE COUNTY AND OBTAIN ALL REQUIRED APPROVALS AND PERMITS.
5. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE CITY OF TUMWATER CONSTRUCTION INSPECTOR PRIOR TO THE START OF CONSTRUCTION.
6. THE CITY OF TUMWATER CONSTRUCTION INSPECTOR SHALL BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF A TAP CONNECTION TO AN EXISTING MAIN.
7. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.
8. GRAVITY SEWER MAIN SHALL BE PVC, ASTM D 3034 SDR 35 OR ASTM F 789 WITH JOINTS AND RUBBER GASKETS CONFORMING TO ASTM D 3212 AND ASTM F 477.
9. PRECAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM C 478. MANHOLES SHALL BE TYPE 1-48" MANHOLE UNLESS OTHERWISE SPECIFIED ON THE PLANS. JOINTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C 443 AND SHALL BE GROUTED FROM THE INSIDE. LIFT HOLES SHALL BE GROUTED FROM THE OUTSIDE AND INSIDE OF THE MANHOLE.
10. SIDE SEWER SERVICES SHALL BE PVC, ASTM D 3034 SDR 35 WITH FLEXIBLE GASKETED JOINTS. SIDE SEWER CONNECTIONS SHALL BE MADE BY A TAP TO AN EXISTING MAIN OR A WYE BRANCH FROM A NEW MAIN.
11. ALL SEWER MAINS SHALL BE FIELD STAKED FOR GRADES AND ALIGNMENT BY A LICENSED ENGINEERING OR SURVEYING FIRM QUALIFIED TO PERFORM SUCH WORK.
12. BEDDING OF THE SEWER MAIN AND COMPACTION OF THE BACKFILL MATERIAL SHALL BE REQUIRED IN ACCORDANCE WITH THE ABOVE MENTIONED SPECIFICATION (SEE NOTE 1).
13. TEMPORARY STREET PATCHING SHALL BE ALLOWED FOR AS APPROVED BY THE CITY ENGINEER. TEMPORARY STREET PATCHING SHALL BE PROVIDED BY PLACEMENT AND COMPACTION OF ONE INCH MAXIMUM ASPHALT CONCRETE COLD MIX. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AS REQUIRED.
14. EROSION CONTROL MEASURES SHALL BE TAKEN BY THE CONTRACTOR DURING CONSTRUCTION TO PREVENT DEPOSIT OF SILT TO EXISTING AND PROPOSED STORM DRAINAGE FACILITIES AND ROADWAYS.
15. PROVIDE TRAFFIC CONTROL PLAN(S) IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS REQUIRED.
16. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A COPY OF THESE APPROVED PLANS ON THE CONSTRUCTION SITE AT ALL TIMES.
17. ANY CHANGES TO THE DESIGN SHALL FIRST BE REVIEWED AND APPROVED BY THE PROJECT ENGINEER AND THE CITY OF TUMWATER.
18. ALL LINES SHALL BE CLEANED AND PRESSURE TESTED IN CONFORMANCE WITH THE ABOVE REFERENCED SPECIFICATIONS (SEE NOTE 1). A WATER TEST OF ALL MANHOLES IN ACCORDANCE WITH TUMWATER STANDARDS IS ALSO REQUIRED. TESTING SHALL TAKE PLACE AFTER ALL UNDERGROUND UTILITIES ARE INSTALLED AND COMPACTION OF THE ROADWAY SUBGRADE IS COMPLETED.
19. PRIOR TO BACKFILL, ALL MAINS AND APPURTENANCES SHALL BE INSPECTED AND APPROVED BY THE CITY OF TUMWATER CONSTRUCTION INSPECTOR. APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FOR CORRECTION OF ANY DEFICIENCIES AND/OR FAILURES AS DETERMINED BY SUBSEQUENT TESTING AND INSPECTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF TUMWATER FOR THE REQUIRED INSPECTIONS.
20. ALL SANITARY SEWER MAINS SHALL BE PLACED IN PUBLIC RIGHT-OF-WAY OR IF IN EASEMENT AREAS, PROVIDE 12 FOOT WIDE PAVED (SIX INCH BALLAST, TWO INCH CRUSHED, TWO INCH ASPHALT) ACCESS TO ALL MANHOLES. NO LOT LINE SEWER MAINS WILL BE ALLOWED.
21. ALL MAINS WILL BE DEDICATED TO THE CITY FOR MAINTENANCE WITH APPROPRIATE BILLS OF SALE AND EASEMENTS.
22. CITY OWNERSHIP OF THE MAIN AND LATERAL WILL GO TO THE PROPERTY LINE OR EASEMENT IF A CLEANOUT EXISTS AT THIS POINT. IF NO CLEANOUT EXISTS, CITY RESPONSIBILITY ENDS AT THE LIMIT OF THE MAIN.
23. ALL PLASTIC PIPE AND SERVICES SHALL BE INSTALLED WITH CONTINUOUS TRACER TAPE INSTALLED 12" TO 18" UNDER THE PROPOSED FINISHED SUBGRADE. THE MARKER SHALL BE PLASTIC NON-BIODEGRADABLE, MENTAL CORE OR BACKING MARKED SEWER WHICH CAN BE DETECTED BY A STANDARD METAL DETECTOR. IN ADDITION, ALL SEWERS SHALL BE INSTALLED WITH 12 GAUGE DIRECT BURY, U.S.E. GREEN DOUBLE COATED COPPER WIRE WRAPPED AROUND ALL PLASTIC PIPE, BROUGHT UP, BARED AND WRAPPED THREE TIMES AROUND THE MANHOLE RING. DRY LOW VOLTAGE GREASE SPLICE KITS SHALL BE USED AT JUNCTIONS. CONTINUITY TESTING OF THE WIRE WILL BE DONE BY THE CITY. TAPE SHALL BE TERRA TAPE "D" OR APPROVED EQUAL. THE TAPE AND WIRE SHALL BE FURNISHED BY THE CONTRACTOR.



GENERAL NOTES:
1. PRECAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM C478. JOINTS SHALL BE RUBBER GASKETED CONFORMING TO ASTM C443 AND IN ADDITION THE JOINTS SHALL BE SEALED WITH BEST SEAL MASTIC.
2. THE LID AND FRAME FOR THE MANHOLE SHALL BE INSTALLED OVER THE OUTFALL CHANNEL AND PIPE.
3. STEPS IN THE MANHOLE SHALL HAVE 6" MINIMUM CLEARANCE. THE FIRST STEP SHALL BE A MAXIMUM OF 28" FROM THE TOP OF THE COVER.
4. GU LINER BASES WITH THE LINER EXTENDED TO THE FIRST JOINT SHALL BE REQUIRED FOR ALL MANHOLES.
5. CONNECTION TO EXISTING MANHOLES SHALL BE MADE BY KOR-N-SEAL BOOT OR SAND COLLAR.
6. ALL JOINTS AND LIFTING HOLES SHALL BE GROUTED FROM THE INSIDE AND OUTSIDE.
7. A SEWER GUARD SHALL BE INSTALLED IN ANY MANHOLE SUBJECT TO FLOODING.

CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS
TYPE 1 MANHOLE

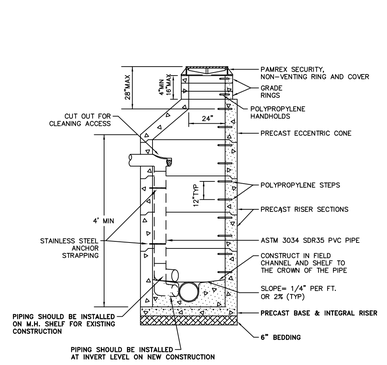
APPROVED				DWG. NO.
CITY ENGINEER				SS-2
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	MW	NOV. 2014	



GENERAL NOTES:
1. ON MANHOLES OUTSIDE OF THE ASPHALT ADD REINFORCING STEEL AS SHOWN ABOVE, DEFORMED BAR TO MEET ASTM A615 GRADE 60 FY=60,000 P.S.I.
2. ALL SEWER MANHOLE LID AND RING ASSEMBLIES SHALL BE PAMREX SECURITY, NON-VENTING RING AND COVER.
3. ALL SEWER MANHOLE LID AND RING ASSEMBLIES SHALL BE DUCTILE IRON AND MANUFACTURED IN THE USA. NO BOLT DOWN LIDS SHALL BE ALLOWED UNLESS REQUIRED BY THE CITY OF TUMWATER.
4. ADJUST GRADE RINGS WITH BRICK WEDGES OR GROUT. NO WOOD OR ROCKS SHALL BE USED AS ADJUSTMENT SPACERS.

CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS
MANHOLE RING ASSEMBLIES

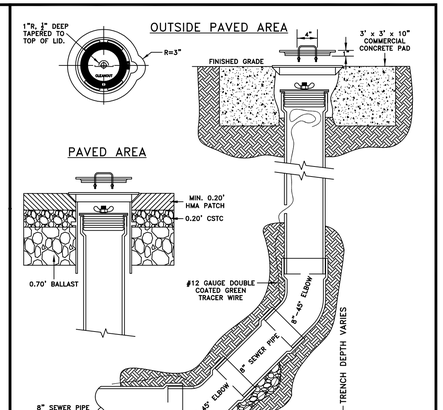
APPROVED				DWG. NO.
CITY ENGINEER				SS-5
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	KMC	JAN. 2013	



GENERAL NOTES:
1. THE GENERAL NOTES FOR A TYPE 1 MANHOLE, DRAWING NUMBER 7-1, SHALL APPLY.
2. MANHOLE SHALL BE MINIMUM 54" DIAMETER UNLESS OTHERWISE APPROVED BY THE PUBLIC WORKS DIRECTOR.
3. INSIDE DROP CONNECTIONS SHALL NOT BE USED WHEN CONNECTED TO A FORCE MAIN.

CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS
INSIDE DROP CONNECTION - PVC

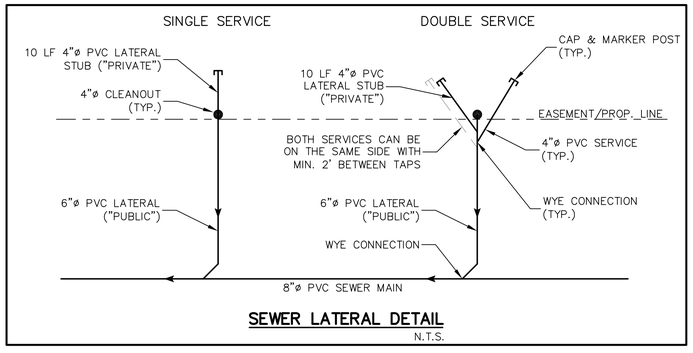
APPROVED				DWG. NO.
CITY ENGINEER				SS-8
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	KMC	JAN. 2012	



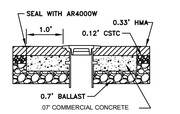
GENERAL NOTES:
1. SEWER MAINS LARGER THAN 8" IN DIAMETER WILL REQUIRE PLACEMENT OF MANHOLE.

CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS
CLEANOUT
8" SEWER MAIN

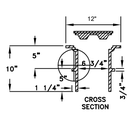
APPROVED				DWG. NO.
CITY ENGINEER				SS-10
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	MW	NOV. 2014	



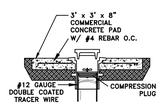
SEWER LATERAL DETAIL
N.T.S.



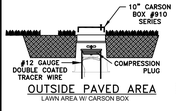
INSIDE PAVED ROADWAY



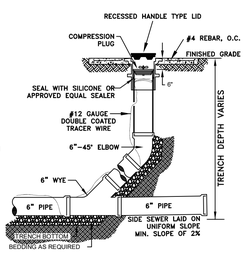
CAST IRON RING AND COVER



OUTSIDE PAVED AREA
IN LANDSCAPING AREAS



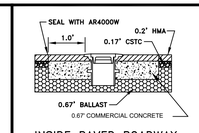
OUTSIDE PAVED AREA
LAWN AREA W/ CARSON BOX



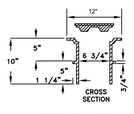
GENERAL NOTES:
1. ALL SEWER PIPE SHALL BE ASTM 3034 SDR 35.
2. LOCATED IN CENTER OF CUL-DE-SAC WHEN APPROPRIATE.

CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS
6" LATERAL CLEANOUT DUCTILE IRON

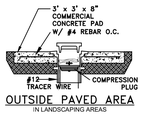
APPROVED				DWG. NO.
CITY ENGINEER				SS-11
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	MW	NOV. 2014	



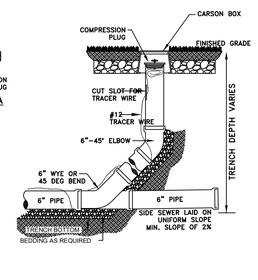
INSIDE PAVED ROADWAY



PVC LATERAL AND RAISER



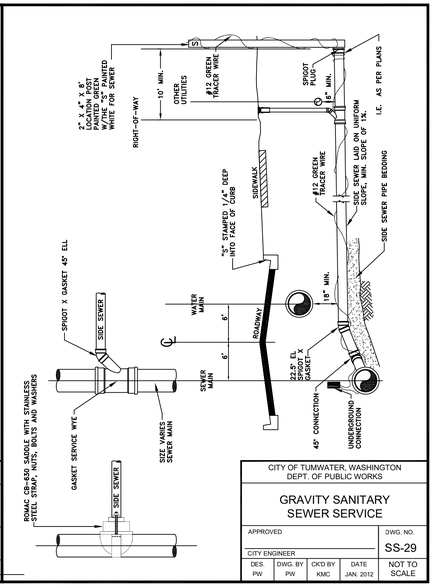
OUTSIDE PAVED AREA
IN LANDSCAPING AREAS



GENERAL NOTES:
1. ALL SEWER PIPE SHALL BE ASTM 3034 SDR 35.
2. LOCATED IN CENTER OF CUL-DE-SAC WHEN APPROPRIATE.

CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS
6" LATERAL CLEANOUT PVC

APPROVED				DWG. NO.
CITY ENGINEER				SS-11-A
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	MW	NOV. 2014	



CITY OF TUMWATER, WASHINGTON
DEPT. OF PUBLIC WORKS
GRAVITY SANITARY SEWER SERVICE

APPROVED				DWG. NO.
CITY ENGINEER				SS-29
DES.	DWG. BY	CK'D BY	DATE	NOT TO SCALE
PW	PW	KMC	JAN. 2012	

"CALL UNDERGROUND LOCATE BEFORE YOU DIG"

APPROVED
PERMIT #: TUM-19-0854
08/26/20192:26:25 PM
Public Works Department
Brandon Hicks, P.E., City Engineer
Approval Expires One Year From Date Above

TUM-18-1124

NO.	DATE	REVISION
1	8/19/19	REVISIONS PER CITY 1ST REVIEW COMMENTS
2	8/26/19	REVISIONS PER CITY 2ND REVIEW COMMENTS

GENDLEK SHORT PLAT
CITY OF TUMWATER WA

SANITARY SEWER DETAILS AND NOTES

DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY:
SCALE: N.T.S.
DATE: 6/26/19

8/26/19
CHRISTOPHER M. MEEK
STATE OF WASHINGTON
37401
REGISTERED PROFESSIONAL ENGINEER

PO Box 12690
Olympia, WA 98508
360.705.2474
www.olyeng.com
OLYMPIC ENGINEERING
Civil Engineering • Land Planning • Project Management

JOB NUMBER: 19002
DRAWING NAME: 19002_SSDT1

C3.2
SHEET: 12 OF 12