

A PART OF PARCEL NUMBER 6021590090, LOT 9, SECTION 04, TOWNSHIP 19N, RANGE 04 E, QUARTER 43 OF THE SOUTH HILL MALL PH II BSP SW OF SE 4-19-04E, CITY OF PUYALLUP, COUNTY OF PIERCE, AND STATE OF WASHINGTON.

HOMWOOD SUITES

3500 S. MERIDIAN

PUYALLUP, WA 98373

OWNER
HERITAGE INN & SUITES OF PUYALLUP, LLC
4500 36TH AVE. S, SUITE 200
FARGO, ND 58104
PH: 701-235-4077
JEFF@DAKOTALG.COM

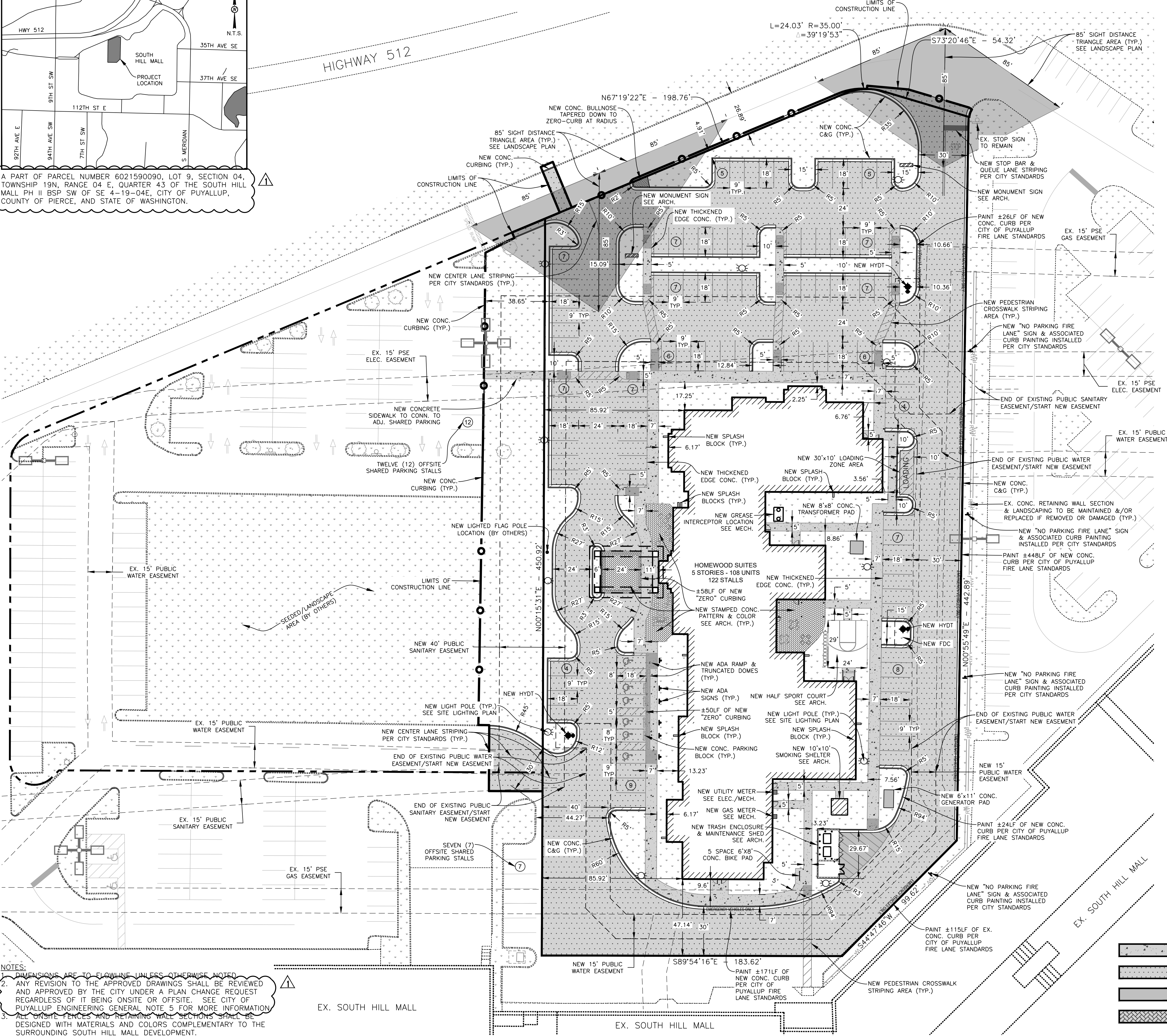
CIVIL ENGINEER
LOWRY ENGINEERING
1111 WESTRAC DR., SUITE 108
FARGO, ND 58103
PH: 701-235-0199
JLOWRY@LOWRYENG.COM

SITE STATISTICS		
SITE COVERAGE		
ITEM	AREA (SF)	AREA (%)
BUILDING FOOTPRINT *	24,776	19.8
SITE IMPERVIOUS	102,381	81.8
SITE PERVIOUS	22,844	18.2
GROSS FLOOR AREA	103,879	83.0
TOTAL SITE AREA	125,225	100
MAXIMUM BUILDING HEIGHT 73' - 1 1/8" (5 STORIES)		
FLOOR AREA RATIO 0.83		
ZONING: CCX - COMMUNITY COMMERCIAL MIXED USE		

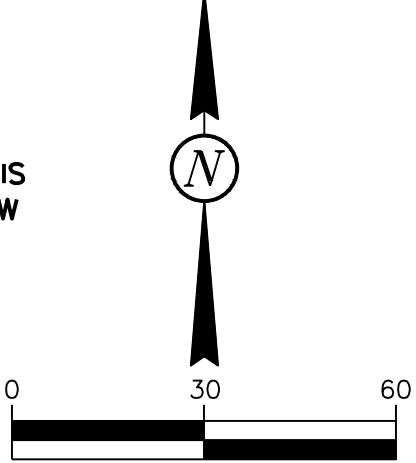
PARKING REQUIRED:	
1 SPACE PER EACH SLEEPING UNIT	108
1 SPACE PER EACH 2 EMPLOYEES ON LARGEST SHIFT	
1 EMPLOYEE PER 10 UNITS DIVIDED BY 2	6
1 SPACE PER 90 SF OF MEETING/BANQUET ROOMS	
1 MEETING ROOM (740 SF) DIVIDED BY 90 SF	8
TOTAL REQUIRED	122 MAX. / 104 MIN.
PARKING PROVIDED:	
STANDARD STALLS (9' X 18')	97
ADA STALLS (8' X 18')	6
SHARED OFF-SITE PARKING (9' X 18')	19
TOTAL PROVIDED	122

* BUILDING COVERAGE INCLUDES FIRST FLOOR FOOTPRINT.

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- CITY COMMENTS - 07-13-21**
 - ADDED LEGAL DESCRIPTION BELOW THE VICINITY MAP
 - REVISED PLAN APPROVAL NOTE PER CoP ENGINEERING GENERAL NOTE 5
 - ADDED PLAN SHEETS FOR THE ADA RAMP IMPROVEMENTS PIECE
 - ADDED CoP APPROVAL STAMPS
- CITY & WATER COMMENTS - 11-05-21**
 - REMOVED THE OFFSITE ADA IMPROVEMENTS PLAN SHEETS FROM THIS SET FOR SEPARATE APPLICATION/REVIEW
 - ADDED PLAN SHEETS FOR THE STORMWATER PRODUCT MANUFACTURER DETAILS



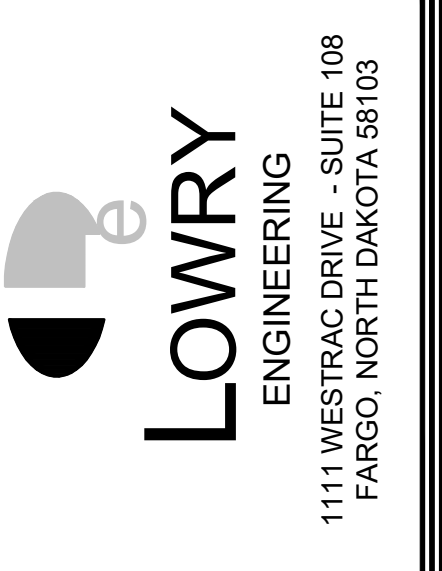
CALL BEFORE YOU DIG
ONE CALL - WASHINGTON
1-800-424-5555 or 811

<p>APPROVED</p> <p>BY: <i>[Signature]</i></p> <p>CITY OF PUYALLUP ENGINEERING SERVICES DATE: 11/15/2021</p> <p>NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.</p> <p>THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.</p> <p>FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.</p>	<p>FIRE HYDRANT/FDC LOCATION/ACCESS APPROVED</p> <p>BY: <i>[Signature]</i></p> <p>CITY OF PUYALLUP FIRE CODE OFFICIAL DATE: 11/15/2021</p> <p>NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.</p> <p>THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.</p> <p>FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE FIRE CODE OFFICIAL.</p>
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NOTES:

- DIMENSIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED
- ANY REVISION TO THE APPROVED DRAWINGS SHALL BE REVIEWED AND APPROVED BY THE CITY UNDER A PLAN CHANGE REQUEST REGARDLESS OF IT BEING ONSITE OR OFFSITE. SEE CITY OF PUYALLUP ENGINEERING GENERAL NOTE 5 FOR MORE INFORMATION
- ALL ONSITE FENCES AND RETAINING WALL SECTIONS SHALL BE DESIGNED WITH MATERIALS AND COLORS COMPLEMENTARY TO THE SURROUNDING SOUTH HILL MALL DEVELOPMENT.

- 4" CONCRETE SIDEWALK
- 3" ASPHALT PAVEMENT
- 6" CONCRETE PAVEMENT
- PAVER PATIO OR DECORATIVE CONCRETE



REVISIONS

07-15-21	CITY COMMENTS
11-05-21	CITY & FRUITLAND MUTUAL WATER COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373



LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	1 OF 23

OVERALL SITE PLAN

C-1

GENERAL NOTES:

- 1. ALL WORK IN CITY RIGHT-OF-WAY REQUIRES A PERMIT FROM THE CITY OF PUYALLUP. PRIOR TO ANY WORK COMMENCING, THE GENERAL CONTRACTOR SHALL ARRANGE FOR A PRECONSTRUCTION MEETING AT THE DEVELOPMENT SERVICES CENTER TO BE ATTENDED BY ALL CONTRACTORS THAT WILL PERFORM WORK SHOWN ON THE ENGINEERING PLANS...

SANITARY SEWER NOTES:

- 1. ALL WORK IN CITY RIGHT-OF-WAY REQUIRES A PERMIT FROM THE CITY OF PUYALLUP. PRIOR TO ANY WORK COMMENCING, THE GENERAL CONTRACTOR SHALL ARRANGE FOR A PRECONSTRUCTION MEETING AT THE DEVELOPMENT SERVICES CENTER TO BE ATTENDED BY ALL CONTRACTORS THAT WILL PERFORM WORK SHOWN ON THE ENGINEERING PLANS...

WATER SYSTEM NOTES:

- 1. ALL WORK IN CITY RIGHT-OF-WAY REQUIRES A PERMIT FROM THE CITY OF PUYALLUP. PRIOR TO ANY WORK COMMENCING, THE GENERAL CONTRACTOR SHALL ARRANGE FOR A PRECONSTRUCTION MEETING AT THE DEVELOPMENT SERVICES CENTER TO BE ATTENDED BY ALL CONTRACTORS THAT WILL PERFORM WORK SHOWN ON THE ENGINEERING PLANS...

- 8. BACTERIOLOGICAL (COLIFORM AND IRON BACTERIA) TEST SAMPLES WILL BE TAKEN BY THE CITY (OR FMWC, VW OR TCW WHEN SERVED BY THAT PURVEYOR) AND PAID FOR BY THE CONTRACTOR, EXCEPT FOR CAPITAL IMPROVEMENT PROJECTS (CIP) WHICH SHALL BE PAID FOR BY THE CITY.

STORMWATER NOTES:

- 1. ALL WORK IN CITY RIGHT-OF-WAY REQUIRES A PERMIT FROM THE CITY OF PUYALLUP. PRIOR TO ANY WORK COMMENCING, THE GENERAL CONTRACTOR SHALL ARRANGE FOR A PRECONSTRUCTION MEETING AT THE DEVELOPMENT SERVICES CENTER TO BE ATTENDED BY ALL CONTRACTORS THAT WILL PERFORM WORK SHOWN ON THE ENGINEERING PLANS...

- STREAM". SOLID CATCH BASIN LIDS (SQUARE UNLESS NOTED AS ROUND) SHALL CONFORM TO WSDOT STANDARD PLAN B-30.20-04 (OLYMPIC FOUNDRY NO. SM60 OR EQUAL). VANED GRATES SHALL CONFORM TO WSDOT STANDARD PLAN B-30.30-03 (OLYMPIC FOUNDRY NO. SM60V OR EQUAL).

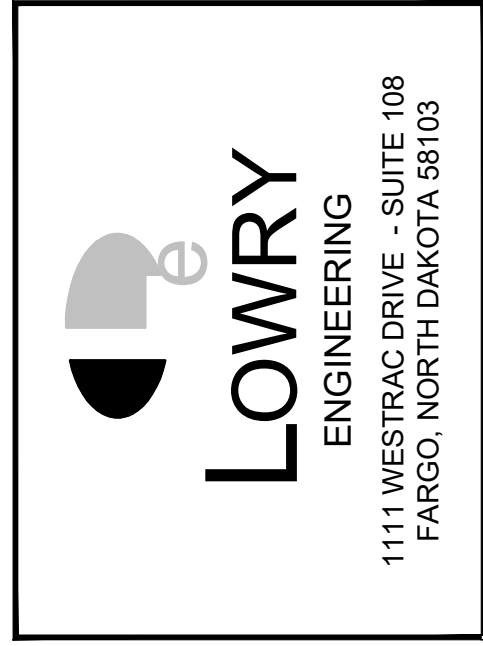


Table with 2 columns: REVISIONS, CITY COMMENTS. Row 1: 07-15-21 - CITY COMMENTS

HOMEWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

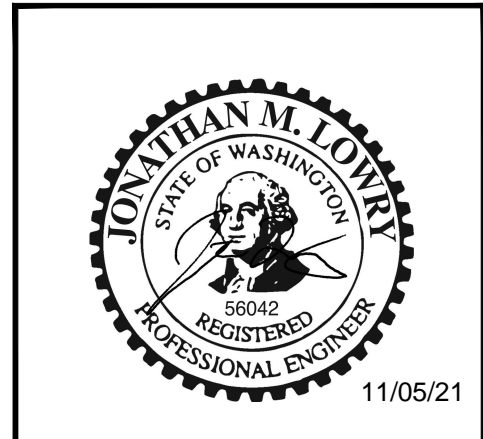


Table with 2 columns: LE JOB #, PROJECT DATE, CHECKED BY, DRAWN BY, APPROVED BY, SHEET. Values: 18009.1, 11/01/2021, JML, DMM, JML, 2 OF 23

GENERAL NOTES
C-2

APPROVED
BY: Jonathan M. Lowry
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021
NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

- CITY COMMENTS - 07-13-21
REVISED PLAN APPROVAL NOTE PER CoP
ENGINEERING GENERAL NOTE 5
ADDED CoP STANDARD NOTES
ADDED CoP APPROVAL STAMPS

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GRADING, EROSION AND SEDIMENTATION CONTROL NOTES:

- ALL WORK IN CITY RIGHT-OF-WAY REQUIRES A PERMIT FROM THE CITY OF PUYALLUP. PRIOR TO ANY WORK COMMENCING, THE GENERAL CONTRACTOR SHALL ARRANGE FOR A PRECONSTRUCTION MEETING AT THE DEVELOPMENT SERVICES CENTER TO BE ATTENDED BY ALL CONTRACTORS THAT WILL PERFORM WORK SHOWN ON THE ENGINEERING PLANS. REPRESENTATIVES FROM ALL APPLICABLE UTILITY COMPANIES, THE PROJECT OWNER AND APPROPRIATE CITY STAFF, CONTACT ENGINEERING SERVICES TO SCHEDULE THE MEETING (253) 841-5568. THE CONTRACTOR IS RESPONSIBLE TO HAVE THEIR OWN APPROVED SET OF PLANS AT THE MEETING.
- AFTER COMPLETION OF ALL ITEMS SHOWN ON THESE PLANS AND BEFORE ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL OBTAIN A "PUNCH LIST" PREPARED BY THE CITY'S INSPECTOR DETAILING REMAINING ITEMS OF WORK TO BE COMPLETED. ALL ITEMS OF WORK SHOWN ON THESE PLANS SHALL BE COMPLETED TO THE SATISFACTION OF THE CITY PRIOR TO ACCEPTANCE OF THE WATER SYSTEM AND PROVISION OF SANITARY SEWER SERVICE.
- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (HEREINAFTER REFERRED TO AS THE "STANDARD SPECIFICATIONS"), WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND AMERICAN PUBLIC WORKS ASSOCIATION, WASHINGTON STATE CHAPTER, LATEST EDITION, UNLESS SUPERSEDED OR AMENDED BY THE CITY OF PUYALLUP CITY STANDARDS FOR PUBLIC WORKS ENGINEERING AND CONSTRUCTION (HEREINAFTER REFERRED TO AS THE "CITY STANDARDS").
- A COPY OF THESE APPROVED PLANS AND APPLICABLE CITY DEVELOPER SPECIFICATIONS AND DETAILS SHALL BE ON SITE DURING CONSTRUCTION.
- ANY REVISIONS MADE TO THESE PLANS MUST BE REVIEWED AND APPROVED BY THE DEVELOPER'S ENGINEER AND THE CITY ENGINEER PRIOR TO ANY IMPLEMENTATION IN THE FIELD. THE CITY SHALL NOT BE RESPONSIBLE FOR ANY ERRORS AND/OR OMISSIONS ON THESE PLANS.
- THE CONTRACTOR SHALL HAVE ALL UTILITIES VERIFIED ON THE GROUND PRIOR TO ANY CONSTRUCTION. CALL (811) AT LEAST TWO WORKING DAYS HOURS IN ADVANCE. THE OWNER AND HIS/HER ENGINEER SHALL BE CONTACTED IMMEDIATELY IF A CONFLICT EXISTS.
- ALL LIMITS OF CLEARING AND AREAS OF VEGETATION PRESERVATION AS PRESCRIBED ON THE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD AND OBSERVED DURING CONSTRUCTION.
- ALL REQUIRED SEDIMENTATION AND EROSION CONTROL FACILITIES MUST BE CONSTRUCTED AND IN OPERATION PRIOR TO ANY LAND CLEARING AND/OR OTHER CONSTRUCTION TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE NATURAL DRAINAGE SYSTEM. THE CONTRACTOR SHALL SCHEDULE AN INSPECTION OF THE EROSION CONTROL FACILITIES PRIOR TO ANY LAND CLEARING AND/OR OTHER CONSTRUCTION. ALL EROSION AND SEDIMENT FACILITIES SHALL BE MAINTAINED IN A SATISFACTORY CONDITION AS DETERMINED BY THE CITY. UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED, THE IMPLEMENTATION, MAINTENANCE, REPLACEMENT, AND ADDITIONS TO THE EROSION AND SEDIMENTATION CONTROL SYSTEMS SHALL BE THE RESPONSIBILITY OF THE PERMITTEE.
- THE EROSION AND SEDIMENTATION CONTROL SYSTEM FACILITIES DEPICTED ON THESE PLANS ARE INTENDED TO BE MINIMUM REQUIREMENTS TO MEET ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND UNEXPECTED OR SEASONAL CONDITIONS DICTATE, FACILITIES WILL BE NECESSARY TO ENSURE COMPLETE SILTATION CONTROL ON THE SITE. DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE PERMITTEE TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES, OVER AND ABOVE THE MINIMUM REQUIREMENTS, AS MAY BE NEEDED TO PROTECT ADJACENT PROPERTIES, SENSITIVE AREAS, NATURAL WATER COURSES, AND/OR STORM DRAINAGE SYSTEMS.
- APPROVAL OF THESE PLANS IS FOR GRADING, TEMPORARY DRAINAGE, EROSION AND SEDIMENTATION CONTROL ONLY. IT DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT STORM DRAINAGE DESIGN, SIZE OR LOCATION OF PIPES, RESTRICTORS, CHANNELS, OR RETENTION FACILITIES.
- ANY DISTURBED AREA WHICH HAS BEEN STRIPPED OF VEGETATION AND WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF 30 DAYS OR MORE, MUST BE IMMEDIATELY STABILIZED WITH MULCHING, GRASS PLANTING, OR OTHER APPROVED EROSION CONTROL TREATMENT APPLICABLE TO THE TIME OF YEAR IN QUESTION. GRASS SEEDING ALONE WILL BE ACCEPTABLE ONLY DURING THE MONTHS OF APRIL THROUGH SEPTEMBER INCLUSIVE. SEEDING MAY PROCEED OUTSIDE THE SPECIFIED TIME PERIOD WHENEVER IT IS IN THE INTEREST OF THE PERMITTEE BUT MUST BE AUGMENTED WITH MULCHING, NETTING, OR OTHER TREATMENT APPROVED BY THE CITY.
- IN CASE EROSION OR SEDIMENTATION OCCURS TO ADJACENT PROPERTIES, ALL CONSTRUCTION WORK WITHIN THE DEVELOPMENT THAT WILL FURTHER AGGRAVATE THE SITUATION MUST CEASE, AND THE OWNER/CONTRACTOR WILL IMMEDIATELY COMMENCE RESTORATION METHODS. RESTORATION ACTIVITY WILL CONTINUE UNTIL SUCH TIME AS THE AFFECTED PROPERTY OWNER IS SATISFIED.
- NO TEMPORARY OR PERMANENT STOCKPILING OF MATERIALS OR EQUIPMENT SHALL OCCUR WITHIN CRITICAL AREAS OR ASSOCIATED BUFFERS, OR THE CRITICAL ROOT ZONE FOR VEGETATION PROPOSED FOR RETENTION.
- LOCATION AND TOP ELEVATIONS OF INLETS AND STRUCTURES MAY NEED TO BE ADJUSTED IN THE FIELD BY THE CONTRACTOR WHERE NECESSARY AND SHALL BE APPROVED BY THE ENGINEER. CONTRACTOR SHALL NOTE ANY CHANGES IN AS-BUILT DRAWINGS.
- IF UNSUITABLE SUBGRADE MATERIALS ARE ENCOUNTERED, THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT (FROM OFF-SITE BORROW MATERIAL) OF ALL UNSUITABLE MATERIAL TO CLASSIFIED AS MH, CH, OH, OL AND PEAT IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM, UNLESS APPROVED IN WRITING BY THE PROJECT GEOTECHNICAL ENGINEER. THE SITE ENGINEER AND GEOTECHNICAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY UPON ENCOUNTERING UNSUITABLE SUBGRADE MATERIAL.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATIONS AND GRADING INCLUDING FURNISHING OFF-SITE BORROW AND DISPOSING OF EXCESS MATERIAL AS REQUIRED TO MEET PLAN GRADES. OFF SITE BORROW SHALL MEET ALL REQUIREMENTS OF THE PROJECT GEOTECHNICAL REPORT (IF AVAILABLE) OR PER WSDOT STANDARD SPECIFICATIONS.
- COMPACTION LIFTS AND TESTING SHALL BE PER WSDOT REQUIREMENTS IN TRENCHING, SUB-BASE, BASE, AND PAVING MATERIALS. SUB-BASE LIFTS SHALL NOT EXCEED 12". BASE LIFTS SHALL NOT EXCEED 6".
- CONTRACTOR SHALL UNIFORMLY GRADE BEHIND CURBS TO MATCH EXISTING GRADES AT PROPERTY LINES.
- GRADE TO ENSURE POSITIVE DRAINAGE. ALL FINISHED SURFACES SHALL BE FREE FROM SURFACE IRREGULARITIES.

PAVING NOTES:

- ALL PAVEMENT SECTION MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF WSDOT.
- AGGREGATE BASE COURSE SHALL MEET THE REQUIREMENTS OF WSDOT.
- CONCRETE FOR FLAT WORK SHALL BE A BATCH PLANT MIX MEETING THE REQUIREMENTS OF THE WSDOT STANDARD SPECIFICATIONS. (MINIMUM 4,000 PSI)
- HOT BITUMINOUS PAVEMENT SHALL BE A PLANT MIX MEETING THE REQUIREMENTS OF THE WSDOT STANDARD SPECIFICATIONS (LATEST EDITION).
- PAINTED PARKING STRIPING SHALL BE WATER BASED 4" IN WIDTH YELLOW STRIPES AND BE LOCATED AS SHOWN ON THE PLANS. ACCESSIBLE PARKING STRIPING SHALL BE BLUE AND PER ADA REQUIREMENTS. GORE AREA LINES SHALL BE PAINTED AT 45 DEGREES AND SHALL HAVE A SPACING OF 3'. CURE COMPOUND SHALL BE REMOVED BY SANDBLASTING, GRINDING, OR OTHER APPROVED METHOD BEFORE INSTALLATION OF PAVEMENT MARKINGS ON CONCRETE TO ENSURE PROPER ADHESION OF THE PAINT. ALL WORK SHALL BE IN ACCORDANCE WITH THE WSDOT REQUIREMENTS.
- SIDEWALK WITHIN THE CITY'S R/W THAT REQUIRES REPLACEMENT AS PART OF THE DEVELOPMENT AND/OR STREET IMPROVEMENTS SHOULD BE PHASED IN SUCH A WAY AS TO MINIMIZE THE DURATION OF THE SIDEWALK CLOSURE TO THE EXTENT FEASIBLE. THE DEVELOPER SHOULD MAKE EVERY ATTEMPT TO HAVE SIDEWALK REPAIRED AND REOPENED FOR PUBLIC USE WITHIN 30 DAYS OF REMOVAL.

TEMPORARY TRAFFIC CONTROL NOTES:

- UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AN ATSSA CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS) AND ANY NECESSARY TEMPORARY TRAFFIC CONTROL DEVICES ON AND OFF-SITE INCLUDING OBTAINING ANY APPLICABLE PERMITS. THE CONTRACTOR SHALL IDENTIFY THE TCS AND PROVIDE PROOF OF CERTIFICATION AT A PRECONSTRUCTION MEETING.
- CONTRACTOR IS RESPONSIBLE TO INSTALL, INSPECT, MAINTAIN, AND REMOVE

TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE LATEST STANDARDS AND REQUIREMENTS OF THE MUTCD, STANDARD HIGHWAY SIGNS AND MARKINGS BOOK PUBLISHED BY THE FHWA, AND LOCAL REGULATIONS.

- CHANGES TO THE TEMPORARY TRAFFIC CONTROL PLAN SHALL NOT BE MADE WITHOUT APPROVAL FROM THE PERMITTING AUTHORITY.
- RIGHT-OF-WAY CLOSURES LONGER THAN 30 DAYS REQUIRE A R/W LEASE AGREEMENT WHICH WILL INCLUDE THE SUBMITTAL OF A TRAFFIC CONTROL PLAN. TRAFFIC CONTROL PLANS REQUIRED THROUGH A LEASE AGREEMENT MAY BE DIFFERENT FROM THE ONE REQUIRED DURING THE LAND DEVELOPMENT PLAN REVIEW AND ARE SUBJECT TO REVISIONS. THE REVISED TRAFFIC CONTROL PLANS MUST BE SUBMITTED AS PART OF THE LEASE AGREEMENT PROCESS FOR APPROVAL PRIOR TO START OF R/W CLOSURES. CONTRACTOR SHALL CONTACT WSDOT AT (704) 336-8348.

LEGEND

	EX. LIGHT POLE		BORING LOCATION		EX. FIBER OPTIC
	NEW LIGHT POLE		EX. SIGN		EX. GAS LINE
	EX. POWER POLE		NEW SIGN		EX. OVERHEAD ELECTRIC
	NEW GREASE TRAP		NEW PROPERTY PIN SET		EX. CABLE TV
	NEW CLEAN OUT		EX. PROPERTY PIN FOUND		EX. TELEPHONE
	EX. SANITARY MANHOLE		RIGHT OF WAY MARKER		EX. CONTOUR
	NEW SANITARY MANHOLE		HIGH WATER LINE		NEW CONTOUR
	EX. STORM MANHOLE		PARKING COUNT		CENTER LINE/SECTION LINE
	NEW STORM MANHOLE		DOWN SPOUT		GRADE BREAK/DRAINAGE AREAS
	EX. STORM CATCH BASIN		EXPANSION JOINT		NEW TRACKS
	NEW STORM CATCH BASIN		EX. FENCE		EX. ASPHALT PAVEMENT
	EX. CULVERT FLARE END		NEW FENCE		NEW ASPHALT PAVEMENT
	NEW CULVERT FLARE END		EX. GUARDRAIL		EX. CONCRETE PAVEMENT
	EX. HEADWALL		SET BACK		NEW CONCRETE PAVEMENT
	EX. GATE VALVE		EX. EASEMENT		EX. GRAVEL SURFACE
	NEW GATE VALVE		NEW EASEMENT		NEW GRAVEL SURFACE
	EX. WATERLINE FITTINGS		EX. PROPERTY LINE		EX. SIDEWALK/FLATWORK
	NEW WATERLINE FITTINGS		NEW ROW/PROPERTY LINE		NEW SIDEWALK/FLATWORK
	NEW TAPPING SLEEVE & VALVE		PROPERTY BOUNDARY LINE		ACCESSIBLE (ADA) RAMP
	EX. HYDRANT		EX. CURB		STRIPING CROSSWALK
	NEW HYDRANT & VALVE		NEW CURB(INFLOW)		STRIPING ADA ACCESSIBLE
	EX. SHRUB		NEW CURB(OUTFLOW)		STRIPING TURN ARROWS
	EX. DECIDUOUS TREE		EX. RETAINING WALL		SEEDING & HYDROMULCH
	EX. CONIFEROUS TREE		NEW RETAINING WALL		
	NEW SHRUB		EX. SANITARY SEWER		
	NEW DECIDUOUS TREE		NEW SANITARY SEWER		
	NEW CONIFEROUS TREE		EX. SANITARY FORCE MAIN		
	EX. ELECTRICAL TRANSFORMER		NEW SANITARY FORCE MAIN		
	EX. TELEPHONE PEDESTAL		EX. WATER		
	EX. ELECTRICAL OUTLET		NEW WATER		
	EX. UTILITY PEDESTAL		EX. STORM SEWER		
	ELEC MANHOLE EXIST		NEW STORM SEWER		
			EX. DRAIN TILE		
			NEW DRAIN TILE		
			EX. STORM FORCE MAIN		
			NEW STORM FORCE MAIN		

ABBREVIATIONS

ADJ	ADJACENT	ELEV	ELEVATION	P.C.	PRECAST CONCRETE
ALT	ALTERNATE	ENCL	ENCLOSURE	PVIE	POINT OF VERTICAL
ARCH	ARCHITECT	E.O.P.	END OF PROJECT	PVIS	INTERSECTION ELEVATION
ACP	ASBESTOS CEMENT PIPE	E.J.	EXPANSION JOINT		POINT OF VERTICAL
BIT	BITUMINOUS	EX.	EXISTING		INTERSECTION STATION
BLDG	BUILDING	EX.A.	EACH WAY	PREFAB	PREFABRICATED
BM	BENCHMARK	EVCE	END VERTICAL CURVE	PSI	POUNDS PER SQUARE INCH
B.O.	BY OWNER/BY OTHERS	ELEVATION	ELEVATION	PVC	POLYVINYL CHLORIDE PIPE
B.O.P.	BEGINNING OF PROJECT	EVCS	END VERTICAL CURVE STATION	PP	POWER POLE
BV	BUTTERFLY VALVE	FD	FIRE DEPARTMENT	R	RADIUS
BVCE	BEGINNING VERTICAL CURVE	FFE	FIRST FLOOR ELEVATION	RCP	REINFORCED CONCRETE PIPE
	ELEVATION	FO	FIBER OPTICS	RD	ROOF DRAIN
BVCS	BEGINNING VERTICAL CURVE	FTG	FOOTING	REQ'D	REQUIRED
	STATION	G.C.	GENERAL CONTRACTOR	RIM	RIM OF INLET OR CASTING
C	CIVIL	GALV	GALVANIZED	ROW	RIGHT OF WAY
B.P.	CAST IRON	GAL	GALLON	SAN	SANITARY
CIP	CAST IRON PIPE	GRAN	GRANULAR	SS	SANITARY SEWER
CU	COPPER	GV	GATE VALVE	ST	STORM
CMP	CORRUGATED METAL PIPE	HDPE	HIGH DENSITY POLYETHYLENE	STD	STANDARD
CJ	CONTROL JOINT	HORZ	HORIZONTAL	SB	SOIL BORING
CONC	CONCRETE	HB	HOSE BIB	STRUCT	STRUCTURAL
CF	CUBIC FEET	HDCP	HANDICAPPED	SF	SQUARE FEET
CS	CURB STOP	HYD	HYDRANT	SCH	SCHEDULE
C.O.	CLEAN OUT	I	INLET	SW	SIDEWALK
CNTR	CENTER	K	CURVATURE VALUE	T	TELEPHONE
CONST	CONSTRUCTION	M	MECHANICAL	TYP	TYPICAL
CONTR	CONTRACTOR	MH	MANHOLE	UNEX	UN-EXCAVATED
CY	CUBIC YARD	MAX	MAXIMUM	UE	UTILITY EASEMENT
DIA	DIAMETER	MIN	MINIMUM	UGE	UNDERGROUND ELECTRIC
DIP	DUCTILE IRON PIPE	M.J.	MECHANICAL JOINT	UNO	UNLESS NOTED OTHERWISE
DEMO	DEMOLITION	MISC.	MISCELLANEOUS	VERT	VERTICAL
DET	DETAIL	NC	NON-CORROSIVE	V	VERIFY
DIM	DIMENSION	NOM	NOMINAL	VCL	VERTICAL CURVE LENGTH
DOM	DOMESTIC	NIC	NOT IN CONTRACT	VOL	VOLUME
D.S.	DOWN SPOUT	NTS	NOT TO SCALE	VCP	VITRIFIED CLAY PIPE
DWG	DRAWING	OD	OUTSIDE DIMENSION	W	WITH
DWL	DOWEL	OCEW	ON CENTER EACH WAY	W/O	WITH OUT
EA	EACH	OC	ON CENTER	WTH	WITH
ELEC	ELECTRIC	OHE	OVERHEAD ELECTRIC	W	WATER

LOWRY ENGINEERING
1111 WESTRAC DRIVE - SUITE 108
FARGO, NORTH DAKOTA 58103

REVISIONS

07-15-21	CITY COMMENTS
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HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

JONATHAN M. LOWRY
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
56042
11/05/21

LE JOB #	18009.1
PROJECT DATE:	11/01/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	3 OF 23

GENERAL NOTES & LEGEND

C-2.1

- CITY COMMENTS - 07-13-21**
- REVISED PLAN APPROVAL NOTE PER CoP ENGINEERING GENERAL NOTE 5
 - ADDED CoP STANDARD NOTES
 - ADDED CoP APPROVAL STAMP

APPROVED

BY:

CITY OF PUYALLUP
ENGINEERING SERVICES

DATE: 11/15/2021

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

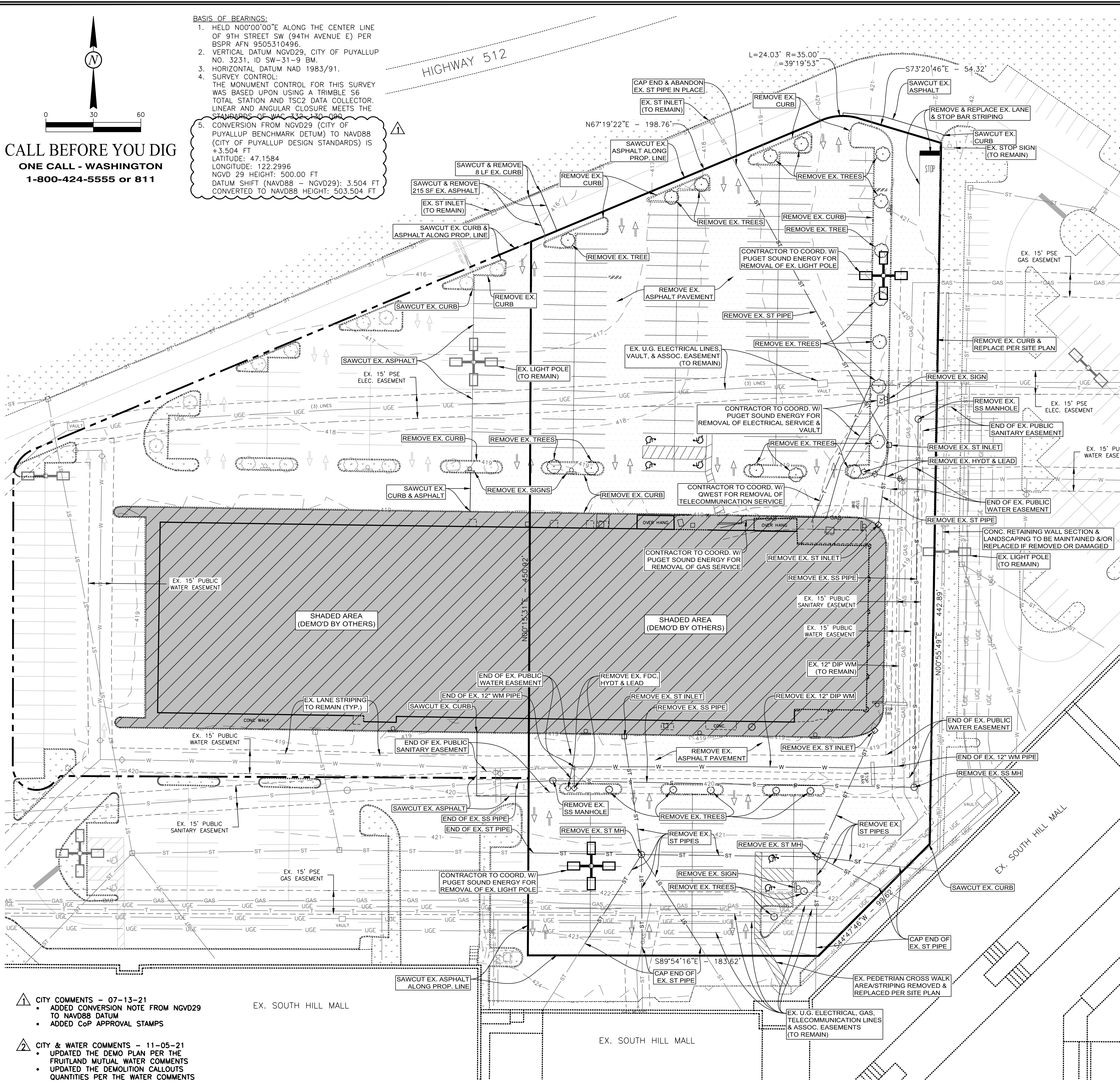
THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

11/05/21 09:07:24AM J.Lowry Shared Files\Projects - 2018 18009.1 - Puyallup, WA\Drawings\18009.1 - Project\Design\18009.1_C - Notes & Details.dwg

CALL BEFORE YOU DIG
ONE CALL - WASHINGTON
1-800-424-5555 or 811

BASIS OF BEARINGS:
 1. HELD 00°00'00"E ALONG THE CENTER LINE OF 9TH STREET SW (94TH AVENUE E) PER BSPR AFN 9505310496.
 2. VERTICAL DATUM NGVD29, CITY OF PUYALLUP NO. 3231, ID SW-31-9 BM.
 3. HORIZONTAL DATUM NAD 1983/91.
 4. SURVEY CONTROL: THE MONUMENT CONTROL FOR THIS SURVEY WAS BASED UPON USING A TRIMBLE S6 TOTAL STATION AND TSC2 DATA COLLECTOR. LINEAR AND ANGULAR CLOSURE MEETS THE STANDARDS OF WAC 332-130-000.
 5. CONVERSION FROM NGVD29 (CITY OF PUYALLUP BENCHMARK DETUM) TO NAVD88 (CITY OF PUYALLUP DESIGN STANDARDS) IS +3.504 FT
 LATITUDE: 47.1584
 LONGITUDE: 122.2996
 NGVD 29 HEIGHT: 500.00 FT
 DATUM SHIFT (NAVD88 - NGVD29): 3.504 FT
 CONVERTED TO NAVD88 HEIGHT: 503.504 FT



DEMOLITION CALLOUTS		
ITEM	QUANTITY	UNIT
REMOVE EX. TREE	24	EA
REMOVE EX. ASPHALT PAVEMENT	10,556	SY
REMOVE EX. CURB	2,570	LF
REMOVE EX. SIGN	6	EA
REMOVE EX. LIGHT POLE	2	EA
REMOVE EX. GAS SERVICE	118	LF
REMOVE EX. TELEPHONE SERVICE	132	LF
REMOVE EX. ELECTRICAL SERVICE	113	LF
REMOVE EX. ELECTRICAL JUNCTION BOX	1	EA
REMOVE EX. WATER SERVICE	27	LF
REMOVE EX. 12" DIP WATER MAIN	204	LF
REMOVE EX. 6" GATE VALVE	2	EA
REMOVE EX. FIRE DEPARTMENT CONNECTION	1	EA
REMOVE EX. HYDRANT W/ LEAD	2	EA
REMOVE EX. 8" PVC SANITARY PIPE	483	LF
REMOVE EX. SANITARY MANHOLE	3	EA
REMOVE EX. 6" PVC STORM PIPE	348	LF
REMOVE EX. 12" PVC STORM PIPE	327	LF
REMOVE EX. 18" PVC STORM PIPE	267	LF
REMOVE EX. STORM INLET	4	EA
REMOVE EX. STORM MANHOLE	2	EA

REMOVAL AREAS BY OTHERS

- DEMOLITION NOTES:**
- CONCRETE CURB AND GUTTER TO BE REMOVED SHALL BE SAW CUT IN FULL SECTIONS.
 - CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT FOR REMOVAL. PAVEMENT SHALL BE REMOVED IN FULL SECTIONS.
 - ALL STRUCTURES AND HARD SURFACES (CONCRETE & ASPHALT) INSIDE THE PROPERTY BOUNDARY AND EASEMENTS SHOWN SHALL BE REMOVED. THE CONTRACTOR IS ENCOURAGED TO VISIT THE SITE IN ORDER TO BID APPROPRIATELY.
 - QUANTITIES SHOWN AS ESTIMATES ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL QUANTITIES. THE CONTRACTOR SHALL BE AWARE THAT THE SURFACE OF THE SITE CONTAINS VARIOUS HARD SURFACES & ITEMS THAT ARE DIFFICULT TO SPECIFICALLY QUANTIFY.
 - IF ANY PAVEMENT THAT IS NOT SUPPOSED TO BE REMOVED IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL SAW CUT AND PATCH THE PAVEMENT AT OWN EXPENSE.
 - LIMITS OF STREET PATCHING AND PATCHING REQUIREMENTS SHALL BE VERIFIED WITH THE CITY OF PUYALLUP.
 - CONTRACTOR RESPONSIBLE FOR DISPOSING ALL WASTE MATERIALS OFFSITE IN ACCORDANCE WITH LOCAL, STATE, & FEDERAL LAWS. THIS INCLUDES BUT IS NOT LIMITED TO WASTE GENERATED FROM DEMOLITION AND REMOVALS, ORGANIC MATTER, METAL, ASPHALT, CONCRETE, AGGREGATE, ETC.
 - CONTRACTOR TO COORDINATE REMOVAL OF EXISTING LIGHT POLES & ELECTRICAL/GAS SERVICES WITH LOCAL UTILITY PROVIDER, PUGET SOUND ENERGY, (888)321-7779.
 - CONTRACTOR TO COORDINATE REMOVAL OF EXISTING TELECOMMUNICATION SERVICE WITH LOCAL UTILITY PROVIDER, QWEST, (800)526-3557.
 - CONTRACTOR TO COORDINATE REMOVAL & CAPPING AT THE MAIN OF EXISTING WATER SERVICE WITH LOCAL UTILITY PROVIDER, FRUITLAND MUTUAL WATER, (253)848-5519.
 - CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AS REQUIRED ALONG ADJACENT ROADWAYS DURING EXCAVATION.
 - CONTRACTOR SHALL MAINTAIN THE EXISTING CONCRETE RETAINING WALL & ASSOCIATED LANDSCAPING ALONG THE EASTERN PROPERTY LINE DURING ALL CONSTRUCTION ACTIVITIES. IF THE EXISTING WALL &/OR LANDSCAPING IS DAMAGED OR REMOVED THE CONTRACTOR MUST REPLACE AT OWN EXPENSE.
 - SUBJECT PROPERTY LIES IN "OTHER AREAS-ZONE X" PER FEMA FLOOD INSURANCE RATE MAP No. 53053C0341E REVISED MARCH 7, 2017. "OTHER AREAS-ZONE X" IS DESCRIBED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANGE FLOODPLAIN.
 - ALTA SURVEY CONDUCTED BY TRUE POINT SURVEYING ON 7/25/2018.

- WATER SEQUENCING:**
- CONTRACTOR SHALL LIVE TAP AT BOTH ENDS OF EXISTING 12" DUCTILE IRON PIPE (DIP) WATER MAIN; SHUT OFF WATER; MAINTAIN EXISTING WATER LOOP AS NECESSARY.
 - CONTRACTOR SHALL CONSTRUCT PROPOSED WATER SYSTEM AS SHOWN ON THE WATER & SANITARY UTILITY PLAN SHEET C-4.
 - CONTRACTOR SHALL TEST NEW WATER SYSTEM FROM LIVE TAP TO LIVE TAP LOCATIONS PER FRUITLAND MUTUAL WATER'S STANDARDS. ONCE TESTING PASSES SHUT DOWN EXISTING LOOP. CAP JUST INSIDE EACH LIVE TAP LOCATION.
 - CONTRACTOR SHALL REMOVE/DECOMMISSION EXISTING WATER PIPE PER DEMOLITION PLAN.

APPROVED
 BY: *[Signature]*
 CITY OF PUYALLUP
 ENGINEERING SERVICES
 DATE: 11/15/2021

APPROVED
 BY: *[Signature]*
 WATER PURVEYOR
 DATE: 11/15/2021

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
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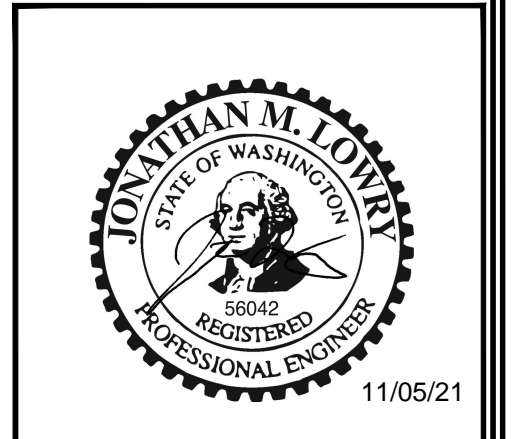
- CITY COMMENTS - 07-13-21**
- ADDED CONVERSION NOTE FROM NGVD29 TO NAVD88 DATUM
 - ADDED CoP APPROVAL STAMPS
- CITY & WATER COMMENTS - 11-05-21**
- UPDATED THE DEMO PLAN PER THE FRUITLAND MUTUAL WATER COMMENTS
 - UPDATED THE DEMOLITION CALLOUTS QUANTITIES PER THE WATER COMMENTS



REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS
11-05-21		CITY & FRUITLAND MUTUAL WATER COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373



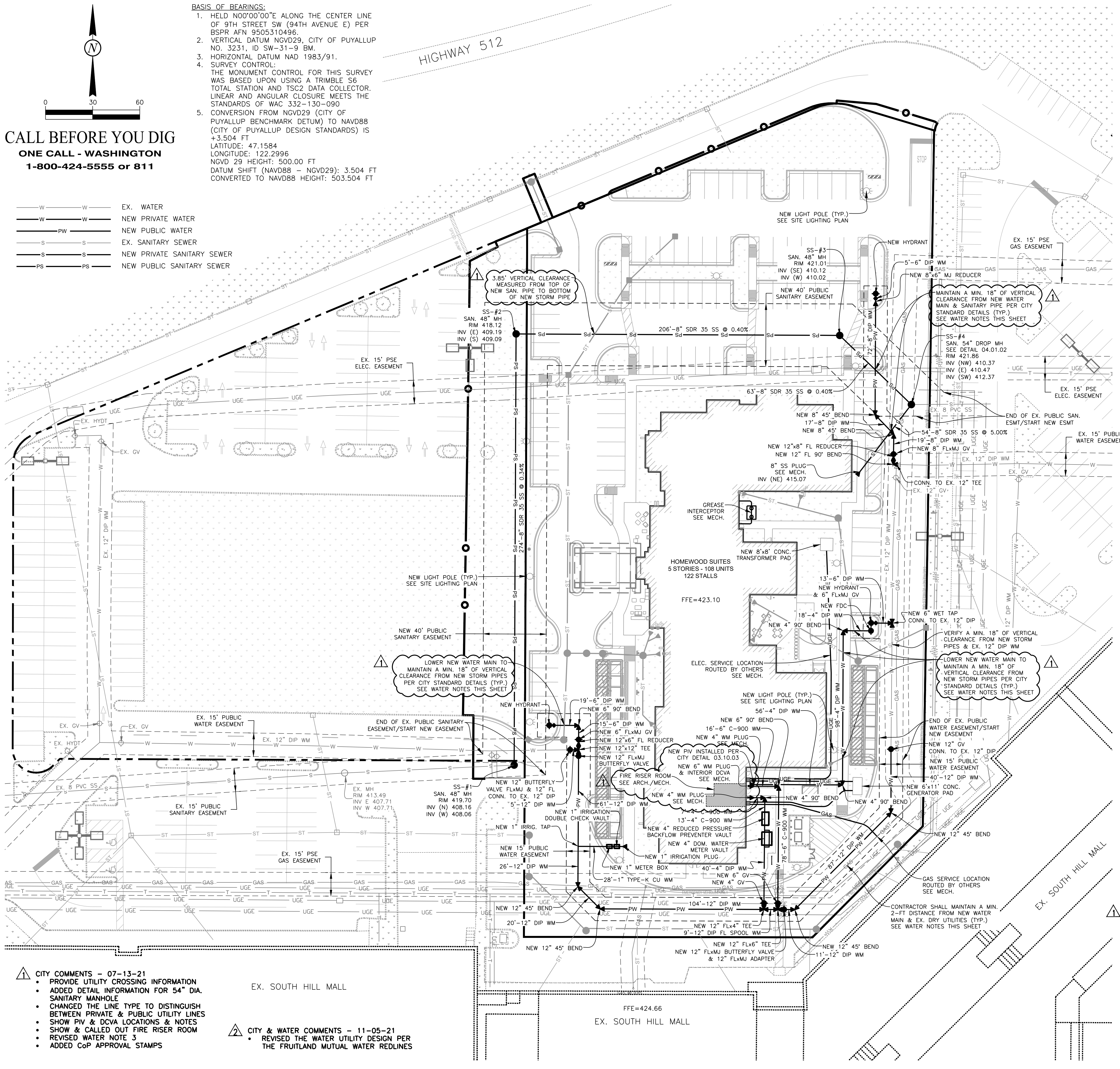
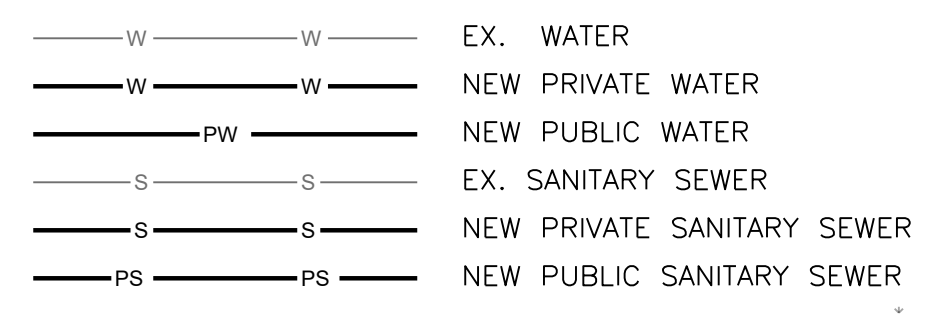
LE JOB # 18009.1
 PROJECT DATE: 11/05/2021
 CHECKED BY: JML
 DRAWN BY: DMM
 APPROVED BY: JML
 SHEET: 4 OF 23

SURVEY OVERLAY & DEMOLITION PLAN
C-3

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 DATUM SHIFT (NAVD88 - NGVD29): 3.504 FT
 CONVERTED TO NAVD88 HEIGHT: 503.504 FT



ESTIMATED WATER QUANTITIES		
ITEM	QUANTITY	UNIT
1" TYPE-K COPPER SERVICE	28	LF
4" DIP WM	212	LF
4" C-900 WM	27	LF
6" DIP WM	52	LF
6" C-900 WM	94	LF
8" DIP WM	108	LF
12" DIP WM	363	LF
8" 45° BEND	2	EA
12" 45° BEND	4	EA
4" 90° BEND	3	EA
6" 90° BEND	2	EA
12" 90° BEND	1	EA
12"x4" TEE	1	EA
12"x6" TEE	1	EA
12"x12" TEE	1	EA
4" GATE VALVE	1	EA
6" GATE VALVE	3	EA
8" GATE VALVE	1	EA
12" GATE VALVE	4	EA
8"x8" REDUCER	1	EA
12"x6" REDUCER	1	EA
12"x8" REDUCER	1	EA
12"x6" WET TAP	1	EA
REMOTE FDC	1	EA
FIRE HYDRANT	3	EA
POST INDICATOR VALVE	1	EA
1" IRRIGATION DOUBLE CHECK METER VAULT	1	EA
1" WATER METER BOX	1	EA
4" WATER SERVICE METER VAULT	1	EA
4" REDUCED PRESSURE BACKFLOW PREVENTER	1	EA
CONNECT TO EXISTING 12" WM	2	EA

ESTIMATED SANITARY QUANTITIES		
ITEM	QUANTITY	UNIT
8" SDR-35 SANITARY SERVICE PIPE	597	LF
STANDARD SANITARY MANHOLE	3	EA
SANITARY DROP MANHOLE	1	EA
CONNECT TO EXISTING	2	EA

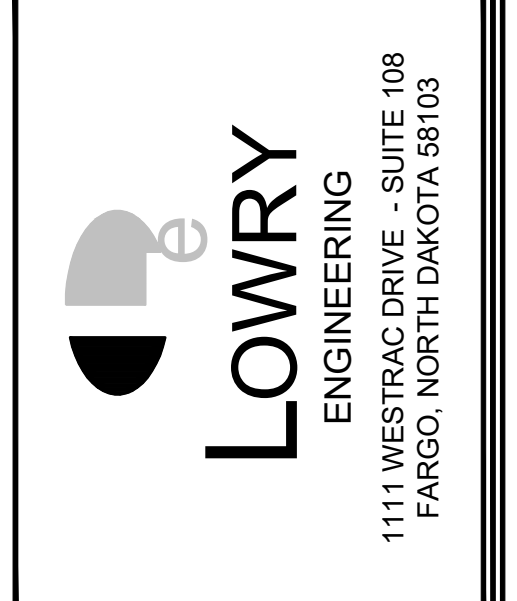
- WATER NOTES:**
- BUILDING WATER CONNECTIONS PER MECHANICAL.
 - EXISTING WATER MAIN VALVE RIMS & STEMS ARE TO BE RAISED OR LOWERED TO FINAL GRADE, AS NEEDED.
 - ALL WATER INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PUYALLUP & FRUITLAND WATER STANDARD CONSTRUCTION DETAILS. SEE UTILITY DETAILS SHEETS FOR MORE INFO.
 - CONTRACTOR SHALL VERIFY ALL EXISTING PLANS FROM THE CITY OF PUYALLUP & FRUITLAND UTILITIES COMPANIES PRIOR TO EXCAVATING.
 - CONTRACTOR TO COORDINATE ALL WATER MAIN RELOCATES WITH FRUITLAND WATER & SOUTH HILL MALL MANAGEMENT STAFF. INSPECTION OF INSTALLED PUBLIC WATER MAIN SHALL BE COORDINATED WITH FRUITLAND WATER.
 - PIPE TRENCHING, BEDDING, & BACKFILL SHALL BE IN ACCORDANCE WITH CITY OF PUYALLUP STANDARD CONSTRUCTION DETAIL NO. 06.01.01.
 - WATER METER & BACKFLOW PREVENTER VAULTS SHALL BE INSTALLED PER CITY OF PUYALLUP STANDARD CONSTRUCTION DETAIL NO. 03.03.03, 03.03.04, & 03.11.01.
 - FIRE HYDRANTS SHALL BE INSTALLED PER CITY OF PUYALLUP STANDARD CONSTRUCTION DETAIL NO. 03.05.01.
 - GATE VALVES SHALL BE INSTALLED PER CITY OF PUYALLUP STANDARD CONSTRUCTION DETAIL NO. 03.01.01.
 - FOR CONSTRUCTION SEQUENCING FOR WATER SEE SURVEY OVERLAY & DEMOLITION PLAN SHEET C-3 FOR MORE INFO.
 - ALL WATER MAIN CROSSING OTHER UTILITIES SHALL BE INSTALLED PER CITY OF PUYALLUP STANDARD CONSTRUCTION DETAIL NO. 03.01.03-1 & 03.01.03-2.
 - ALL MECHANICAL JOINT FITTINGS SHALL HAVE MEGA LUGS.
 - CONTRACTOR SHALL FIELD LOCK GASKET MINIMUM 2 JOINTS EACH WAY FROM ANY CHANGE IN DIRECTION OR DEPTH OF PIPE.
 - FIELD LOCK GASKETS TWO JOINTS BEFORE & AFTER ANY CHANGE IN DIRECTION
 - MEGALUGS ON ALL MECHANICAL JOINT FITTINGS.

- SANITARY SEWER NOTES:**
- BUILDING SANITARY SEWER CONNECTION PER MECHANICAL.
 - EXISTING SEWER MAIN MANHOLES RIMS ARE TO BE RAISED OR LOWERED TO FINAL GRADE, AS NEEDED.
 - ALL SANITARY SEWER INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PUYALLUP STANDARD CONSTRUCTION DETAILS. SEE UTILITY DETAILS SHEETS FOR MORE INFO.
 - PIPE TRENCHING, BEDDING, & BACKFILL SHALL BE IN ACCORDANCE WITH CITY OF PUYALLUP STANDARD CONSTRUCTION DETAIL NO. 06.01.01.
 - SEWER MAIN TAPPING SHALL BE PER CITY OF PUYALLUP STANDARD CONSTRUCTION DETAIL NO. 01.02.01.

APPROVED BY: <i>[Signature]</i> CITY OF PUYALLUP ENGINEERING SERVICES DATE: 11/15/2021	APPROVED BY: <i>[Signature]</i> WATER PURVEYOR DATE: 11/15/2021
NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.	NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE. WATER PURVEYOR WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE WATER PURVEYOR.

- CITY COMMENTS - 07-13-21**
- PROVIDE UTILITY CROSSING INFORMATION
 - ADDED DETAIL INFORMATION FOR 54" DIA. SANITARY MANHOLE
 - CHANGED THE LINE TYPE TO DISTINGUISH BETWEEN PRIVATE & PUBLIC UTILITY LINES
 - SHOW PIV & DCVA LOCATIONS & NOTES
 - SHOW & CALLED OUT FIRE RISER ROOM
 - REVISED WATER NOTE 3
 - ADDED COP APPROVAL STAMPS

- CITY & WATER COMMENTS - 11-05-21**
- REVISED THE WATER UTILITY DESIGN PER THE FRUITLAND MUTUAL WATER REDLINES



REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS
11-05-21		CITY & FRUITLAND MUTUAL WATER COMMENTS

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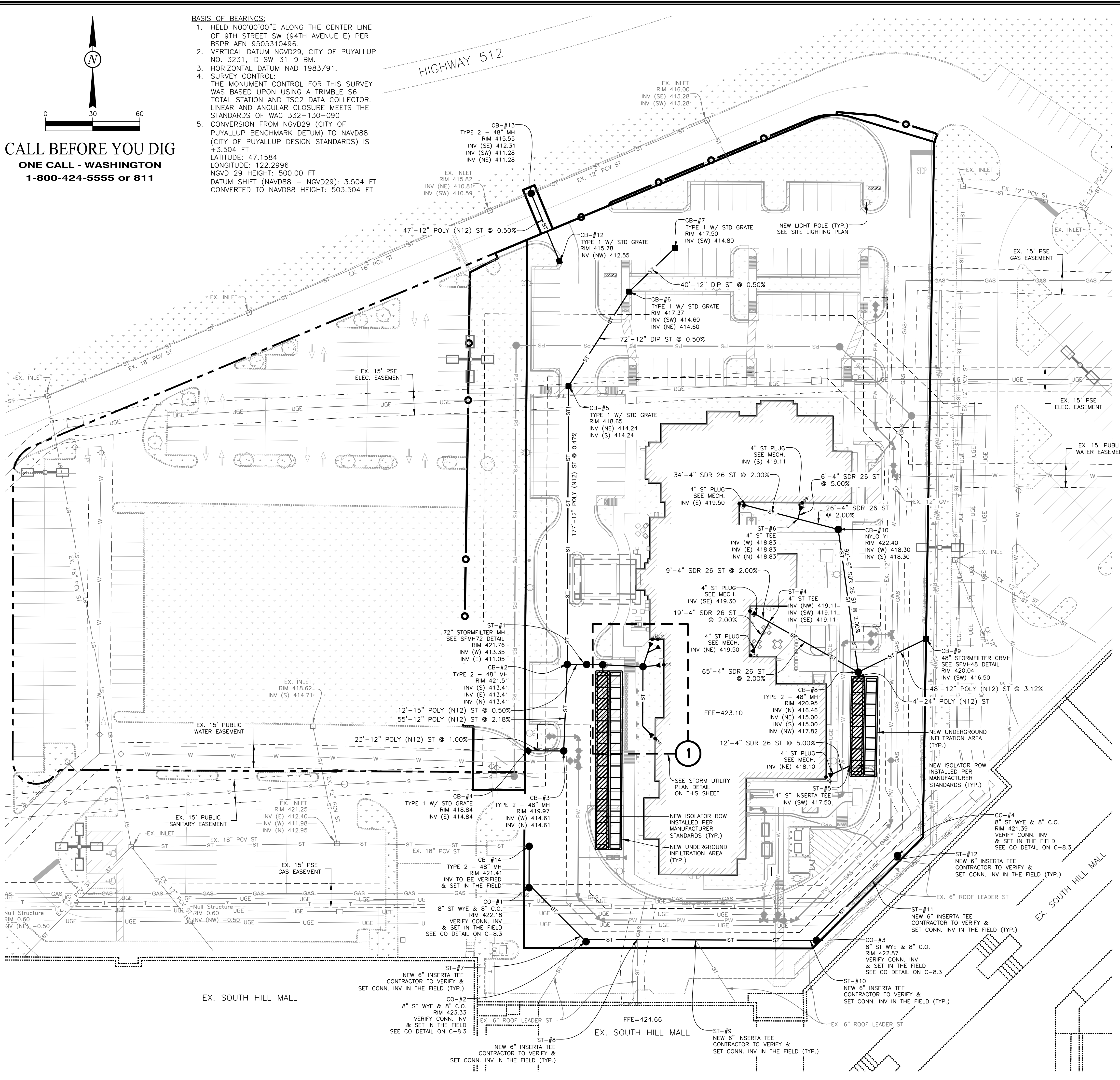
LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	5 OF 23

SANITARY & WATER UTILITY PLAN
C-4

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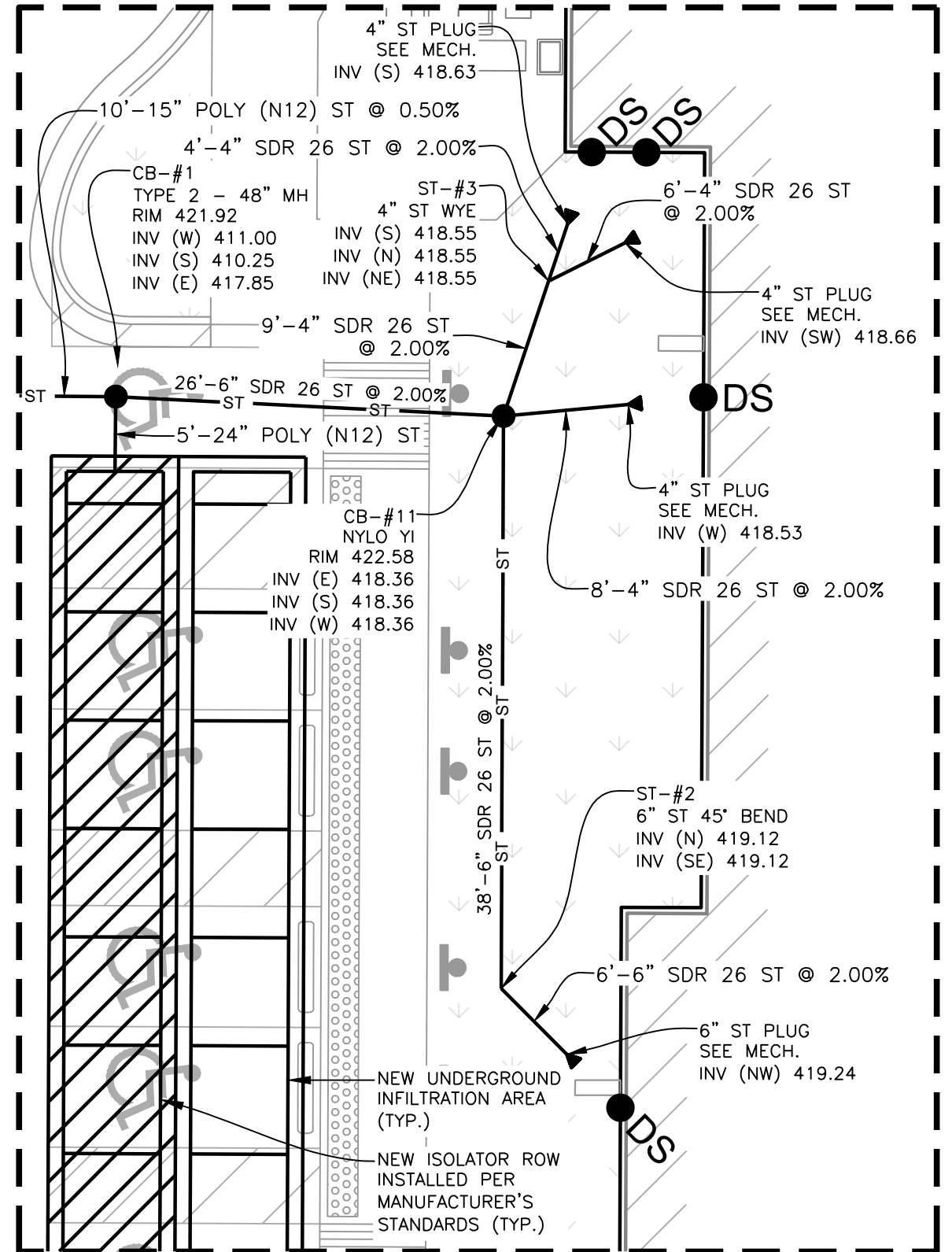
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ESTIMATED STORM QUANTITIES		
ITEM	QUANTITY	UNIT
4" HDPE STORM PIPE	198	LF
6" HDPE STORM PIPE	162	LF
8" HDPE STORM PIPE	296	LF
12" HDPE STORM PIPE	350	LF
12" DUCTILE IRON PIPE	112	LF
15" HDPE STORM PIPE	22	LF
24" HDPE STORM PIPE	9	LF
SINGLE BOX INLET (TYPE-1)	6	EA
STANDARD MANHOLE/INLET (TYPE-2)	7	EA
NYLOPLAST YARD INLET	2	EA
4" STORM WYE	1	EA
4" STORM TEE	2	EA
4" ADS INSERTA TEE	1	EA
6" 45° STORM BEND	1	EA
6" ADS INSERTA TEE	6	EA
8" STORM CLEANOUT	4	EA
8" STORM WYE	4	EA
DOWNSPOUT	9	EA
STORMFILTER DEVICE	2	EA
UNDERGROUND STORAGE/INFILTRATION FACILITY	2	EA

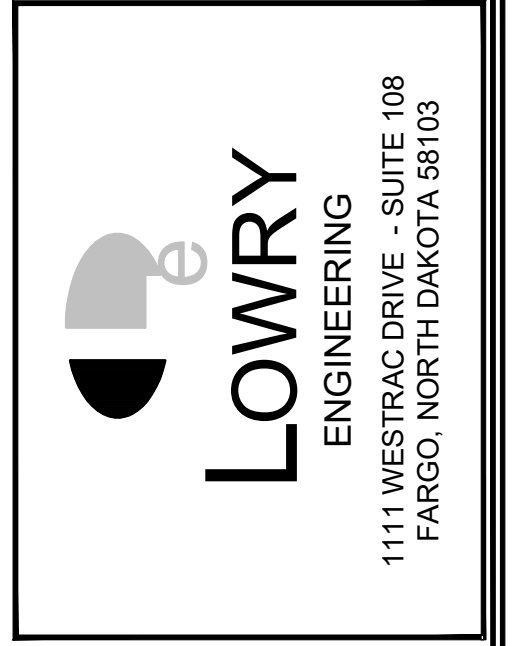
- STORM SEWER & DRAINAGE NOTES:**
1. BUILDING STORM ROOF LEADER/DOWNSPOUT CONNECTIONS PER MECHANICAL.
 2. ALL STORM SEWER INFRASTRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PUYALLUP STANDARD CONSTRUCTION DETAILS. SEE UTILITY DETAILS SHEETS FOR MORE INFO.
 3. DOWNSPOUTS SHALL BE 8" NYLOPLAST DRAIN BASIN AND INLINE DRAIN OR APPROVED EQUAL.
 4. CONNECT DOWNSPOUT DRAIN BASINS TO BELOW GRADE STORM DRAINS PER ARCHITECTURAL PLUMBING PLANS.
 5. PROTECT ALL STORM INLETS, DOWNSPOUTS, AND OPEN PIPE FROM SEDIMENT AND DEBRIS DURING CONSTRUCTION.
 6. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION.



1 STORM UTILITY PLAN DETAIL
 SCALE: 1"=10'

APPROVED
 BY: *[Signature]*
 CITY OF PUYALLUP
 ENGINEERING SERVICES
 11/15/2021
 DATE: 11/15/2021
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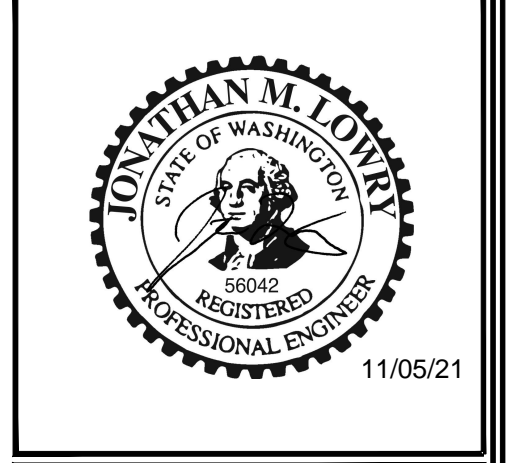
- CITY COMMENTS - 07-13-21**
- UPDATED STORM UTILITY PLANS TO COORDINATE WITH THE STORMWATER ENGINEER'S DESIGN/CALCULATIONS
 - ADDED CoP APPROVAL STAMP
- CITY & WATER COMMENTS - 11-05-21**
- UPDATED STORM UTILITY PLANS TO COORDINATE WITH THE STORMWATER ENGINEER'S DESIGN/CALCULATIONS
 - UPDATED THE ESTIMATED STORM QUANTITIES PER THE STORM UPDATES



REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS
11-05-21		CITY & FRUITLAND MUTUAL WATER COMMENTS

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PUYALLUP, WA 98373



LE JOB # 18009.1
 PROJECT DATE: 11/05/2021
 CHECKED BY: JML
 DRAWN BY: DMM
 APPROVED BY: JML
 SHEET: 6 OF 23

STORM UTILITY PLAN
C-4.1

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ST STRUCTURE SCHEDULE	
#/TYPE	DETAILS
CB-#1 TYPE 2 - 48" MH	RIM 421.92 15" POLY (N12) W 411.00 24" POLY (N12) S 410.25 6" SDR 26 E 417.85
CB-#2 TYPE 2 - 48" MH	RIM 421.51 12" POLY (N12) S 413.41 15" POLY (N12) E 413.41 12" POLY (N12) N 413.41
CB-#3 TYPE 2 - 48" MH	RIM 419.97 12" POLY (N12) W 414.61 12" POLY (N12) N 414.61
CB-#4 TYPE 1 W/ STD GRATE	RIM 418.84 12" POLY (N12) E 414.84
CB-#5 TYPE 1 W/ STD GRATE	RIM 418.65 12" DIP NE 414.24 12" POLY (N12) S 414.24
CB-#6 TYPE 1 W/ STD GRATE	RIM 417.37 12" DIP SW 414.60 12" DIP NE 414.60
CB-#7 TYPE 1 W/ STD GRATE	RIM 417.50 12" DIP SW 414.80
CB-#8 TYPE 2 - 48" MH	RIM 420.95 6" SDR 26 N 416.46 12" POLY (N12) NE 415.00 24" POLY (N12) S 415.00 4" SDR 26 NW 417.82
CB-#9 48" STORMFILTER CBMH SEE SFMH48 DETAIL	RIM 420.04 12" POLY (N12) SW 416.50
CB-#10 NYLO YI	RIM 422.40 4" SDR 26 W 418.30 6" SDR 26 S 418.30
CB-#11 NYLO YI	RIM 422.58 4" SDR 26 E 418.36 6" SDR 26 S 418.36 6" SDR 26 W 418.36
CB-#12 TYPE 1 W/ STD GRATE	RIM 415.78 12" POLY (N12) NW 412.55
CB-#13 TYPE 2 - 48" MH	RIM 415.55 12" POLY (N12) SE 412.31 12" POLY (N12) SW 411.28 12" POLY (N12) NE 411.28
CB-#14 TYPE 2 - 48" MH	RIM 421.41 18" POLY (N12) W 412.66
CO-#1 8" ST WYE & 8" C.O.	RIM 422.18 8" SDR 26 (SEE PLANS)
CO-#2 8" ST WYE & 8" C.O.	RIM 423.33 8" SDR 26 (SEE PLANS)
CO-#3 8" ST WYE & 8" C.O.	RIM 422.87 8" SDR 26 (SEE PLANS)
CO-#4 8" ST WYE & 8" C.O.	RIM 421.39 8" SDR 26 (SEE PLANS)
ST-#1 72" STORMFILTER MH SEE SFMH72 DETAIL	RIM 421.76 15" POLY (N12) W 413.35 15" POLY (N12) E 411.05
ST-#2 6" ST 45° BEND	6" SDR 26 N 419.12 6" SDR 26 SE 419.12

#/TYPE	DETAILS
ST-#3 4" ST WYE	4" SDR 26 S 418.55 4" SDR 26 N 418.55 4" SDR 26 NE 418.55
ST-#4 4" ST TEE	4" SDR 26 NW 419.11 4" SDR 26 SW 419.11 4" SDR 26 SE 419.11
ST-#5 4" ST INSERTA TEE	4" SDR 26 SW 417.50
ST-#6 4" ST TEE	4" SDR 26 W 418.83 4" SDR 26 E 418.83 4" SDR 26 N 418.83
ST-#7 NEW 6" INSERTA TEE CONTRACTOR TO VERIFY & SET CONN. INV IN THE FIELD (TYP.)	
ST-#8 NEW 6" INSERTA TEE CONTRACTOR TO VERIFY & SET CONN. INV IN THE FIELD (TYP.)	
ST-#9 NEW 6" INSERTA TEE CONTRACTOR TO VERIFY & SET CONN. INV IN THE FIELD (TYP.)	
ST-#10 NEW 6" INSERTA TEE CONTRACTOR TO VERIFY & SET CONN. INV IN THE FIELD (TYP.)	
ST-#11 NEW 6" INSERTA TEE CONTRACTOR TO VERIFY & SET CONN. INV IN THE FIELD (TYP.)	
ST-#12 NEW 6" INSERTA TEE CONTRACTOR TO VERIFY & SET CONN. INV IN THE FIELD (TYP.)	

SS STRUCTURE SCHEDULE	
#/DESC.	DETAILS
SS-#1 SAN. 48" MH	RIM 419.70 8" SDR 35 N 408.16 8" SDR 35 W 408.06
SS-#2 SAN. 48" MH	RIM 418.12 8" SDR 35 E 409.19 8" SDR 35 S 409.09
SS-#3 SAN. 48" MH	RIM 421.01 8" SDR 35 SE 410.12 8" SDR 35 W 410.02
SS-#4 SAN. 54" DROP MH SEE DETAIL 04.01.02	RIM 421.86 8" SDR 35 NW 410.37 8" SDR 35 E 410.47 8" SDR 35 SW 412.37

REVISIONS
07-15-21 - CITY COMMENTS
11-05-21 - CITY & FRUITLAND MUTUAL WATER COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373



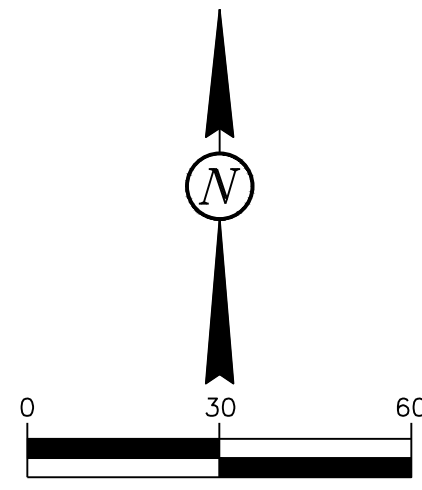
LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	7 OF 23

SANITARY & WATER UTILITY PLAN

C-4.2

- △ CITY COMMENTS - 07-13-21
 - UPDATED STORM UTILITY PLANS TO COORDINATE WITH THE STORMWATER ENGINEER'S DESIGN/CALCULATIONS
 - ADDED CoP APPROVAL STAMP
- △ CITY & WATER COMMENTS - 11-05-21
 - UPDATED THE STORM STRUCTURE SCHEDULE PER THE STORM UPDATES

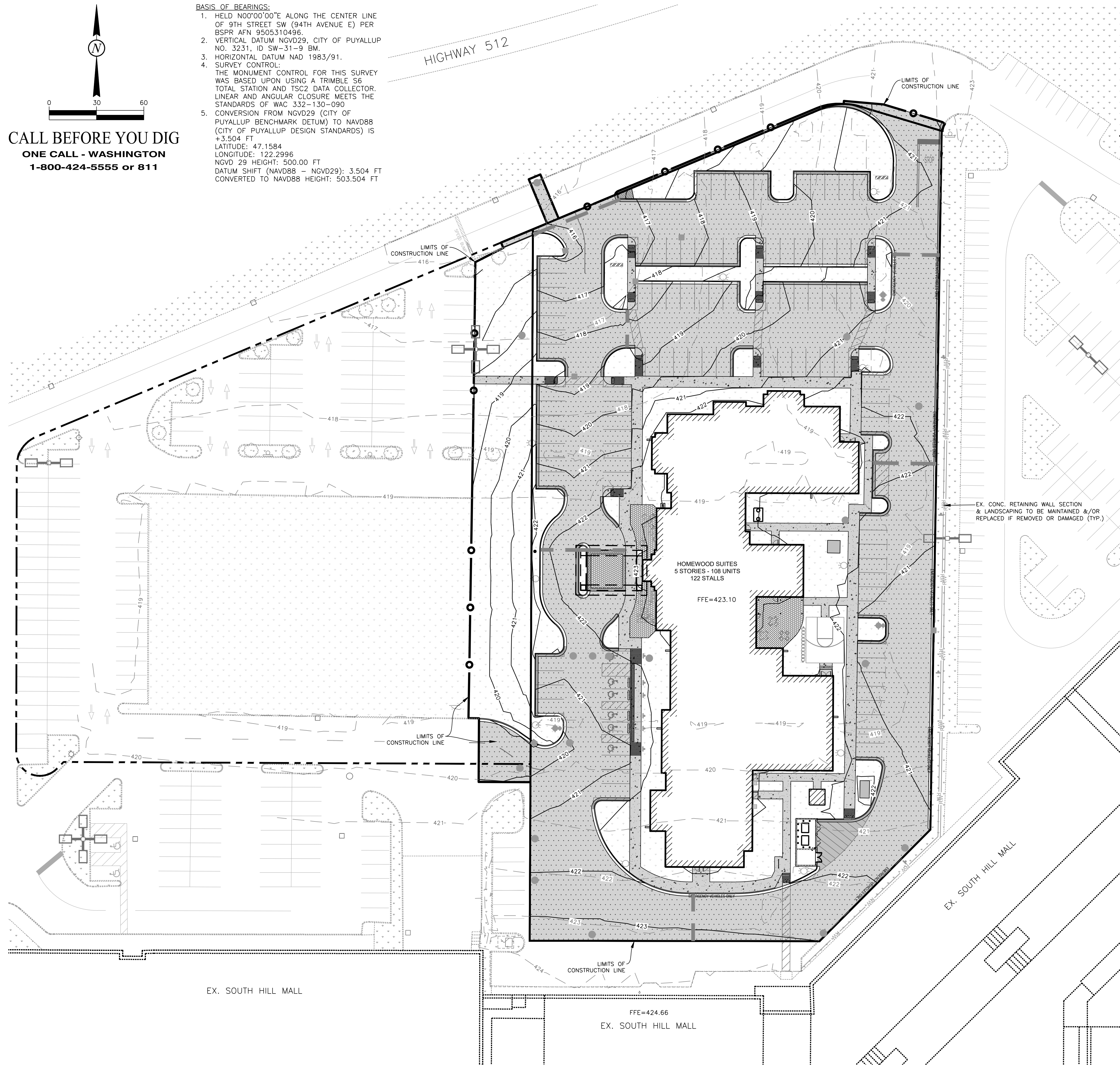
APPROVED
BY: *[Signature]*
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021
NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.
THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.



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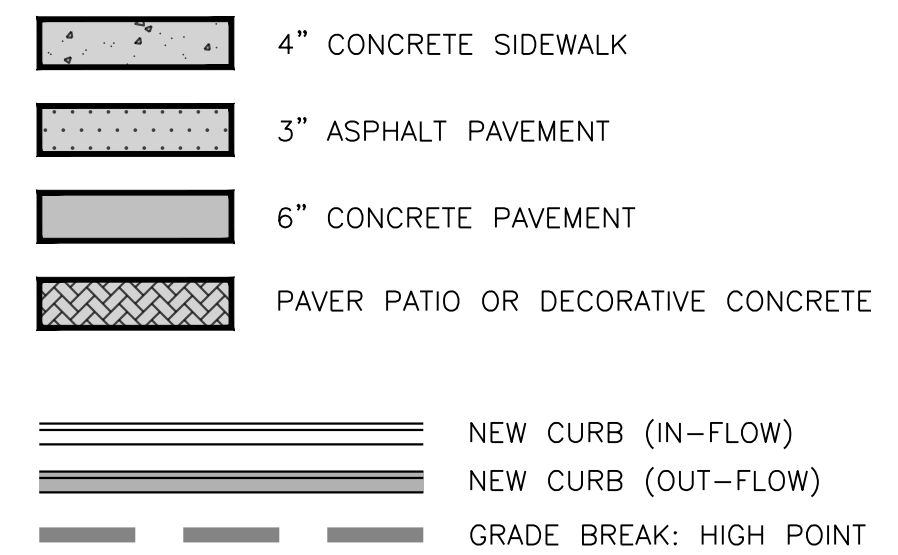
- BASIS OF BEARINGS:**
1. HELD 00°00'00"E ALONG THE CENTER LINE OF 9TH STREET SW (94TH AVENUE E) PER BSPR AFN 9505310496.
 2. VERTICAL DATUM NGVD29, CITY OF PUYALLUP NO. 3231, ID SW-31-9 BM.
 3. HORIZONTAL DATUM NAD 1983/91.
 4. SURVEY CONTROL: THE MONUMENT CONTROL FOR THIS SURVEY WAS BASED UPON USING A TRIMBLE S6 TOTAL STATION AND TSC2 DATA COLLECTOR. LINEAR AND ANGULAR CLOSURE MEETS THE STANDARDS OF WAC 332-130-090
 5. CONVERSION FROM NGVD29 (CITY OF PUYALLUP BENCHMARK DETUM) TO NAVD88 (CITY OF PUYALLUP DESIGN STANDARDS) IS +3.504 FT
 LATITUDE: 47.1584
 LONGITUDE: 122.2996
 NGVD 29 HEIGHT: 500.00 FT
 DATUM SHIFT (NAVD88 - NGVD29): 3.504 FT
 CONVERTED TO NAVD88 HEIGHT: 503.504 FT

HIGHWAY 512



ONSITE ESTIMATED GRADING QUANTITIES		
ITEM	QUANTITY	UNIT
IMPORT	18,386	CY
AGGREGATE BASE COURSE	1,550	CY
SUBGRADE PREP	13,940	SY
THICKENED EDGE CONCRETE	772	LF
24" CURB	2,626	LF
NEW 4" CONCRETE SIDEWALK	1,013	SY
NEW 4" DECORATIVE STAMPED CONCRETE	259	SY
NEW 6" CONCRETE PAVEMENT	80	SY
ADA DOME PANELS	214	SF
NEW 3" ASPHALT PAVEMENT	6,737	SY
PAVEMENT MARKING - STRIPING	3,762	LF
PAVEMENT MARKING - ADA SYMBOL	6	EA

- NOTES:**
1. ELEVATIONS ARE FLOWLINE ELEVATIONS UNLESS OTHERWISE NOTED.
 2. 2" OF STRIPING WAS ASSUMED TO ALLOW FOR CLEARING OF EXISTING 5" ASPHALT & 1.5" GRAVEL FROM THE SITE.
 3. FILL WITHIN THE BUILDING FOOTPRINT(S) WAS EXCLUDED. SEE STRUCTURAL AND ARCHITECTURAL FOR FILL REQUIREMENTS.
 4. NO COMPACTION WAS ASSUMED IN THE QUANTITY FOR AGGREGATE BASE.
 5. A FILL FACTOR OF 1.3 WAS ASSUMED FOR THE COMMON EXCAVATION & EXPORT QUANTITY.
 6. ALL GRADES SHOWN ARE FINISH SURFACE GRADES. ANY LANDSCAPE ROCK IS TO BE PLACED ABOVE THE FINISHED GRADE SURFACE. RIP-RAP PROTECTION IS TO BE PLACED BELOW THE FINISHED GRADE SURFACE.
 7. PAVEMENT MARKINGS QUANTITIES SHOWN ARE FOR NEW STALLS ONLY.
 8. NEW ADA DOME PANEL SHALL BE 2' WIDE.
 9. CONTRACTOR SHALL MATCH EXISTING CURB CROSS SECTION IN CLACKAMAS TOWN CENTER MALL'S PRIVATE ROADWAY.
 10. CONTRACTOR SHALL COORDINATE PATTERN AND COLOR FOR STAMPED COLORED CONCRETE AT MAIN ENTRANCE WITH OWNER.



LOWRY
 ENGINEERING
 1111 WESTRAC DRIVE - SUITE 108
 FARGO, NORTH DAKOTA 58103

REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

11/05/21

LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	8 OF 23

OVERALL SITE
 GRADING
 PLAN

C-5

▲ CITY COMMENTS - 07-13-21
 • ADDED CoP APPROVAL STAMP

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BY: *[Signature]*
 CITY OF PUYALLUP
 ENGINEERING SERVICES
 11/15/2021

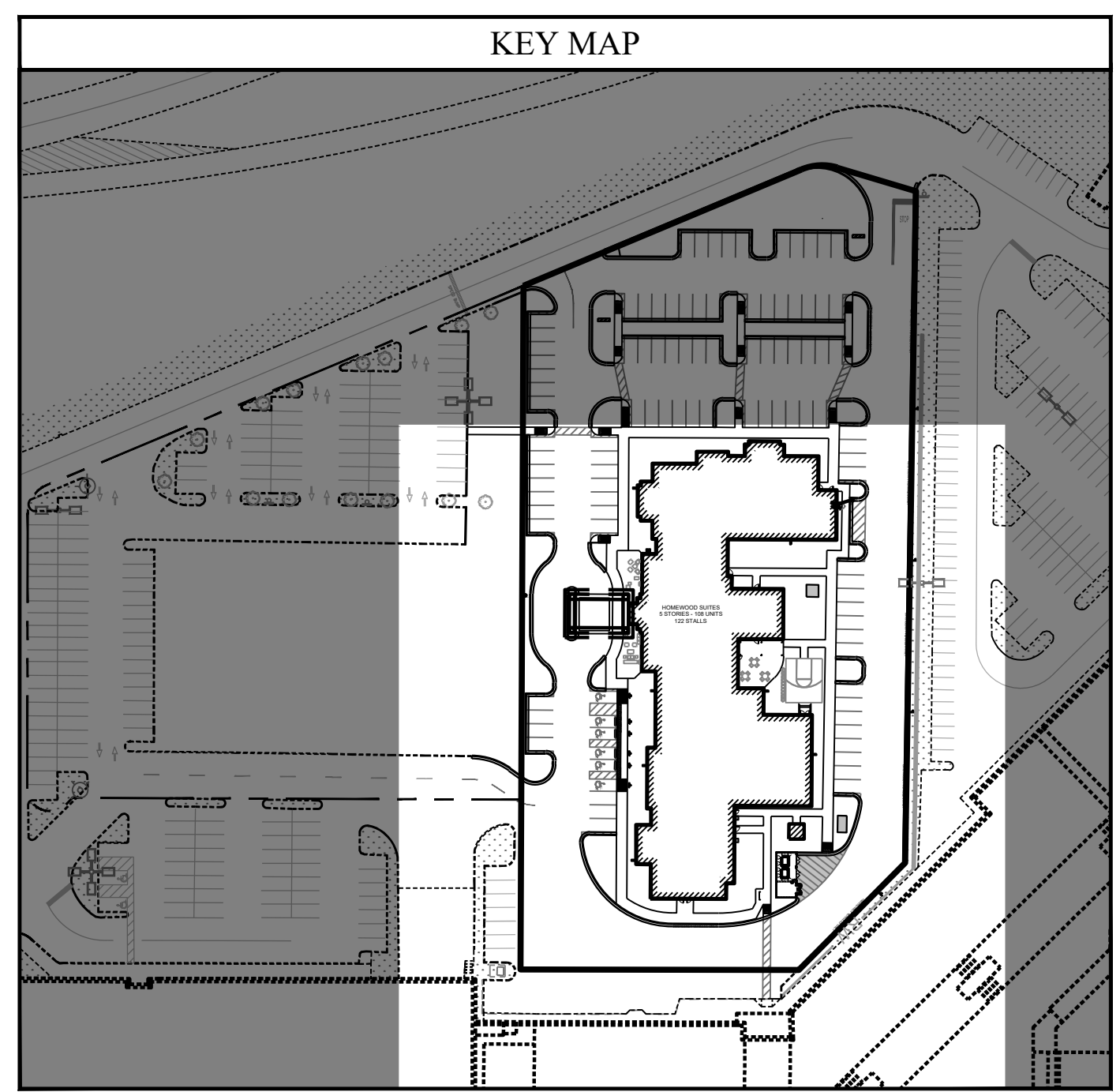
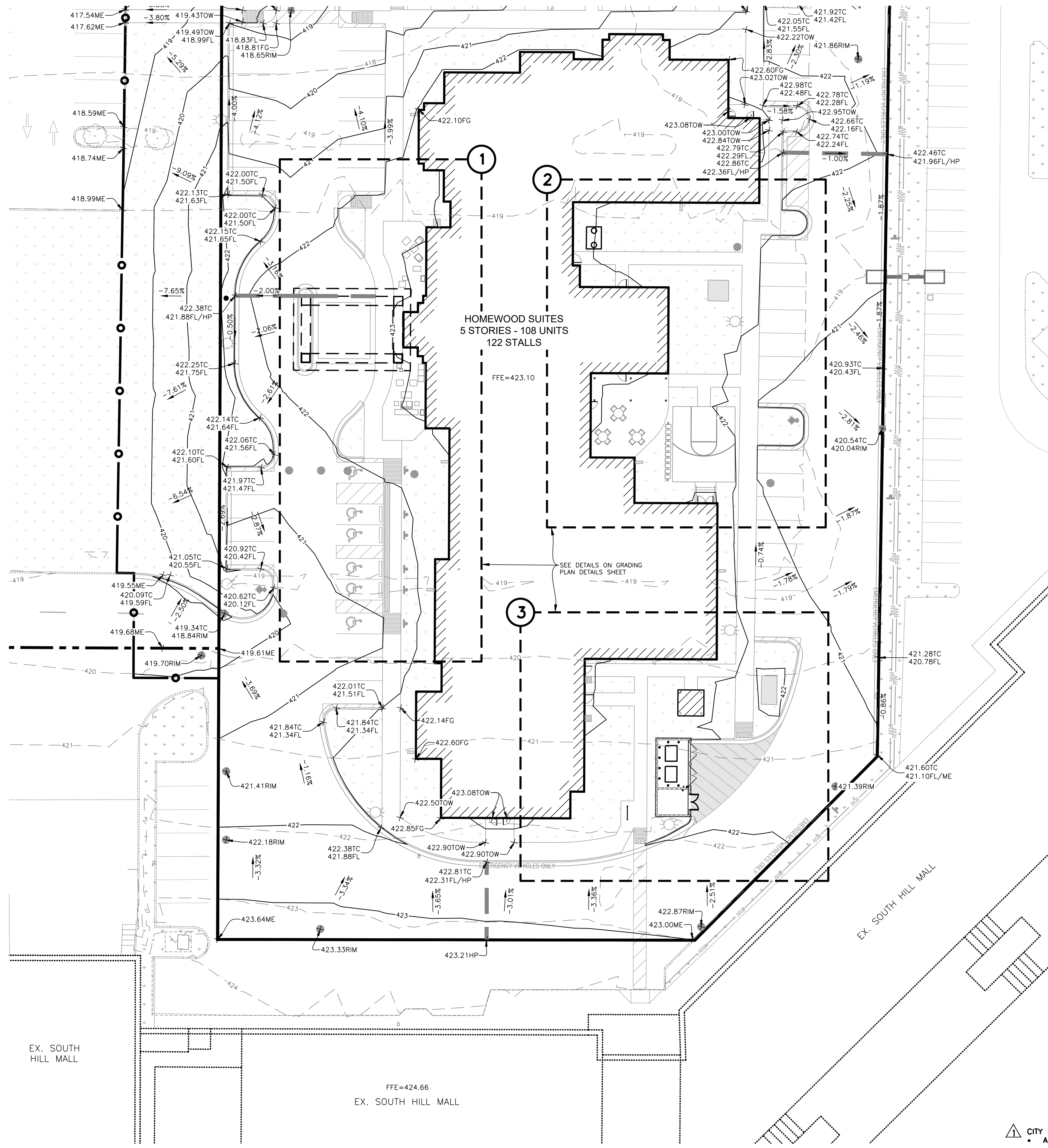
DATE: 11/15/2021

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

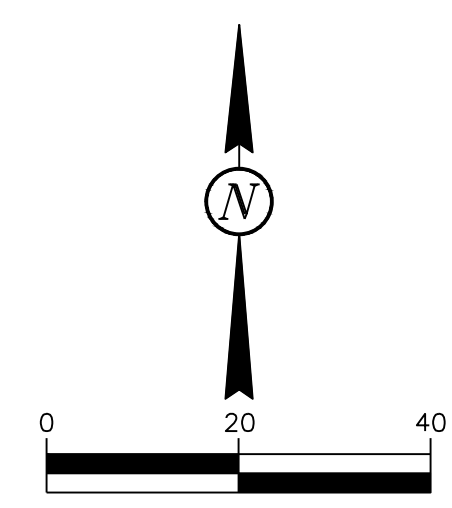
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---	NEW CURB
---	GRADE BREAK: HIGH POINT
---	FINISHED FLOOR ELEVATION
---	FINISH GROUND
---	FLOWLINE
---	HIGH POINT
---	STRUCTURE INVERT ELEVATION
---	LOW POINT
---	MATCH EXISTING GROUND
---	STRUCTURE RIM ELEVATION
---	TOP OF CURB
---	TOP OF CONCRETE
---	TOP OF WALK



CALL BEFORE YOU DIG
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APPROVED

BY: *[Signature]*

CITY OF PUYALLUP
 ENGINEERING SERVICES

DATE: 11/15/2021

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▲ CITY COMMENTS - 07-13-21
 • ADDED CoP APPROVAL STAMP

LOWRY
 ENGINEERING
 1111 WESTRAC DRIVE - SUITE 108
 FARGO, NORTH DAKOTA 58103

REVISIONS

NO.	DATE	DESCRIPTION
07-15-20		CITY COMMENTS

HOMEWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

JONATHAN M. LOWRY
 STATE OF WASHINGTON
 REGISTERED PROFESSIONAL ENGINEER
 56042
 11/05/21

LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	9 OF 23

SOUTHERN
 GRADING
 PLAN

C-5.1

11/05/21 09:08:24AM Z:\Lowry Shared Files\Projects - 2018\18009.1 - Puyallup, WA\Drawings\18009.1_C.dwg

REVISIONS
07-15-21 - CITY COMMENTS

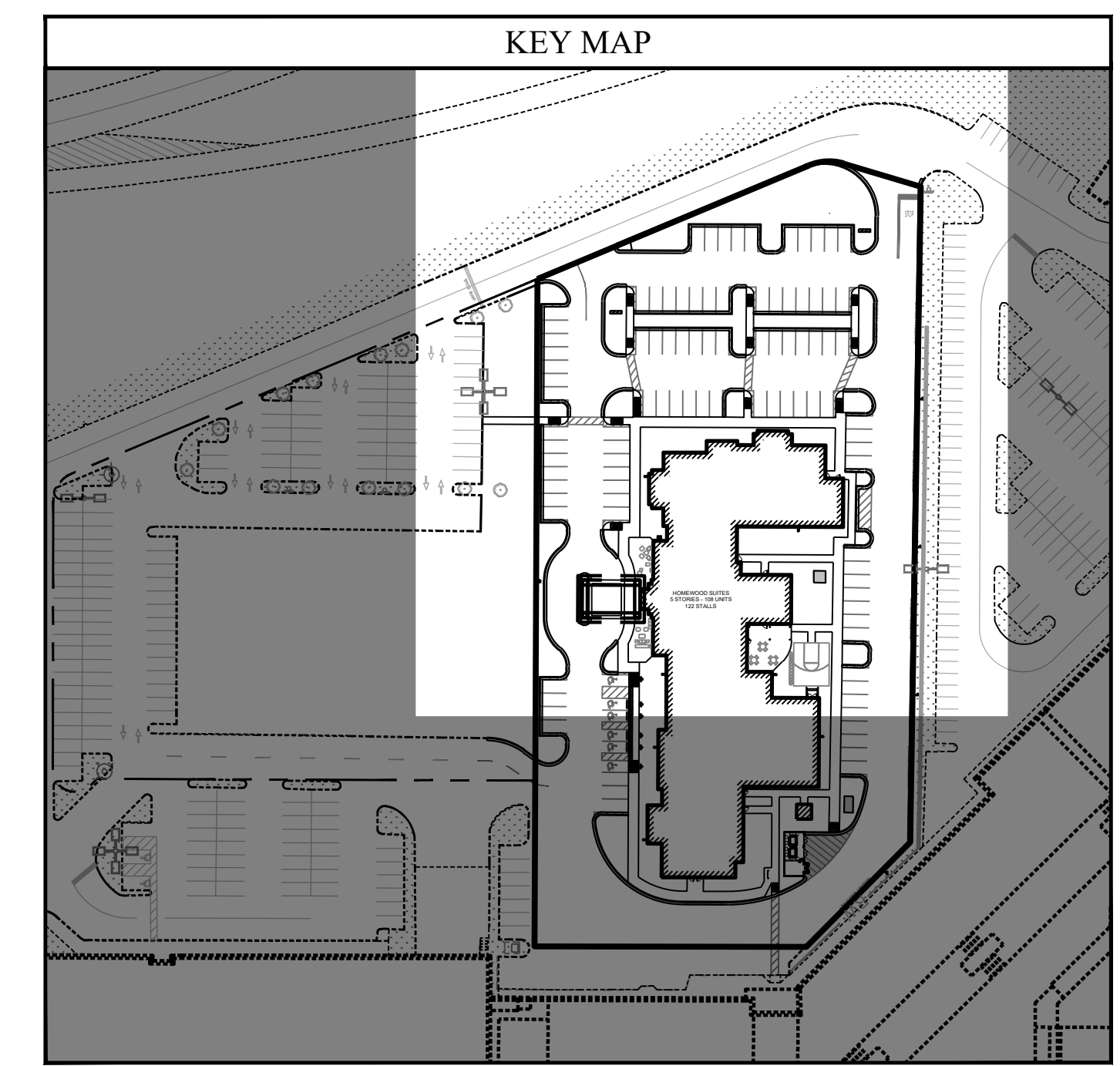
**HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373**



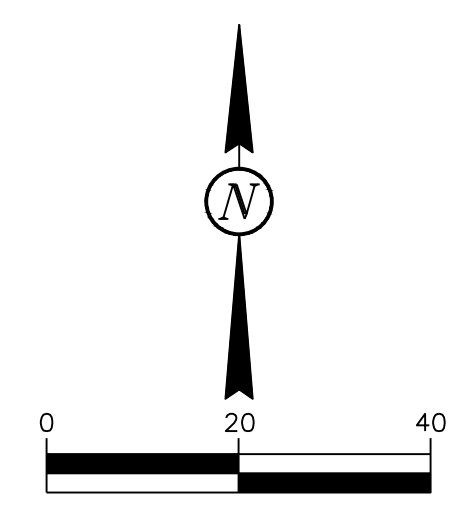
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PROJECT DATE:	11/05/2021
CHECKED BY:	JML
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APPROVED BY:	JML
SHEET:	10 OF 23

NORTHERN
GRADING
PLAN

C-5.2



---	NEW CURB
—	GRADE BREAK: HIGH POINT
---	FINISHED FLOOR ELEVATION
---	FINISH GROUND
---	FLOWLINE
HP	HIGH POINT
INV	STRUCTURE INVERT ELEVATION
LP	LOW POINT
ME	MATCH EXISTING GROUND
RIM	STRUCTURE RIM ELEVATION
TC	TOP OF CURB
TOC	TOP OF CONCRETE
TW	TOP OF WALK



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APPROVED

BY: *Jonathan M. Lowry*

CITY OF PUYALLUP
ENGINEERING SERVICES

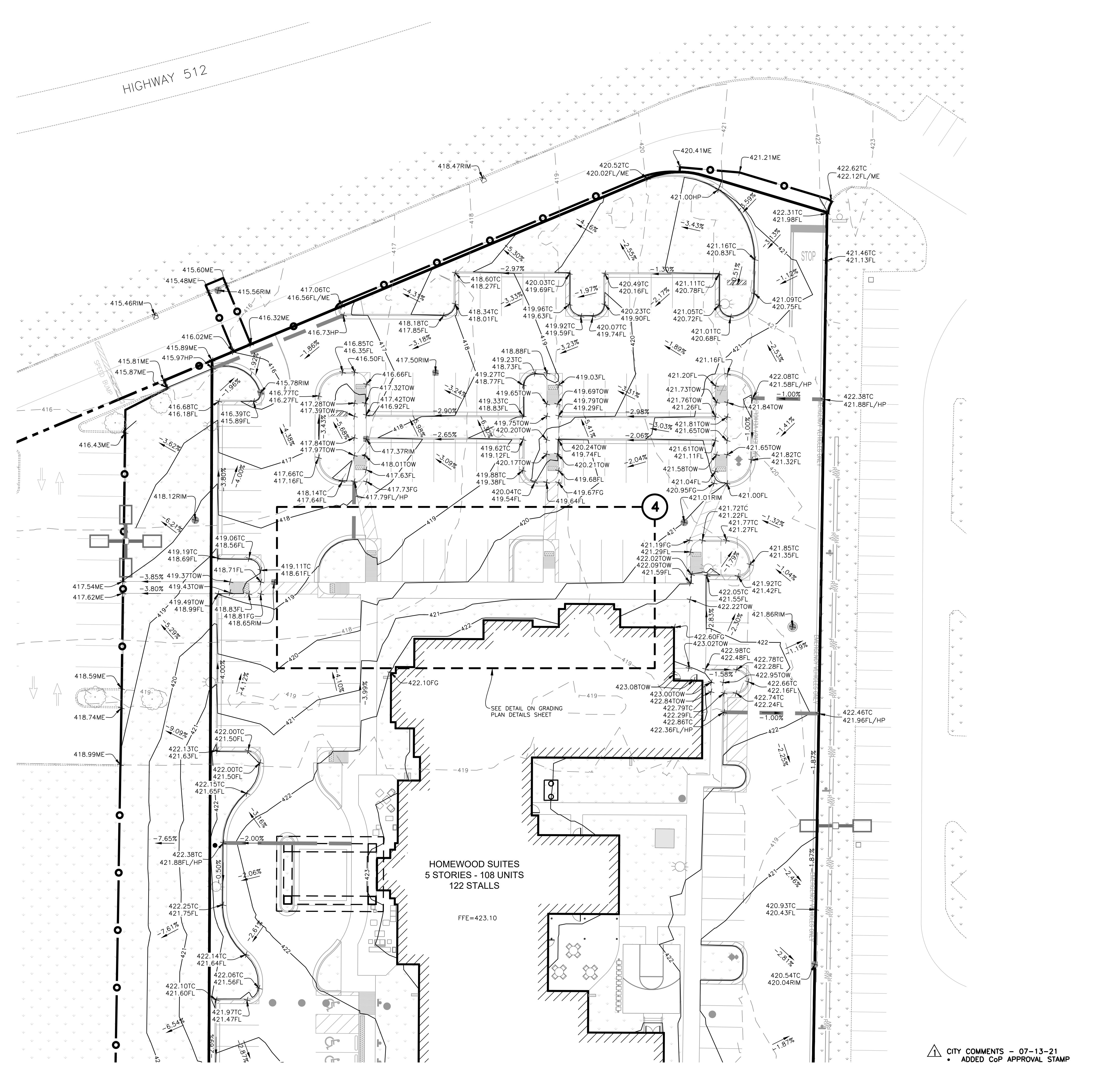
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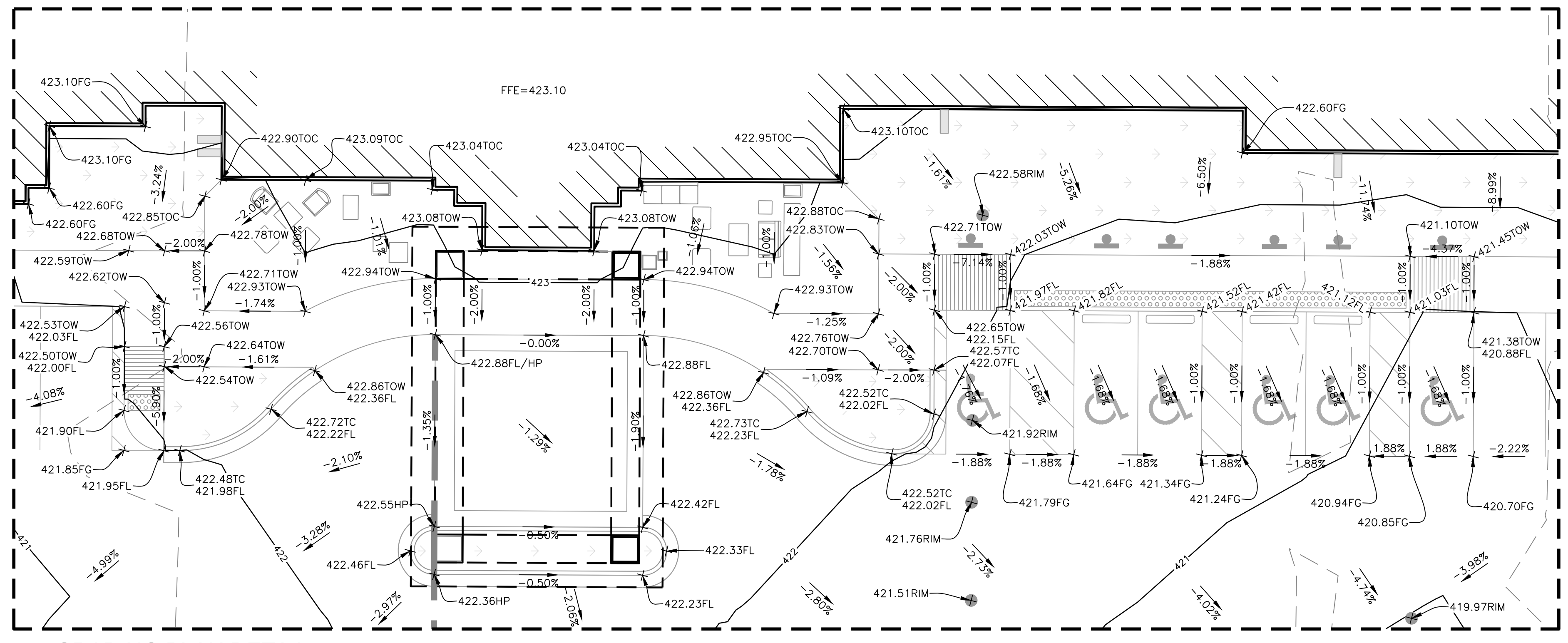
▲ CITY COMMENTS - 07-13-21
• ADDED CoP APPROVAL STAMP



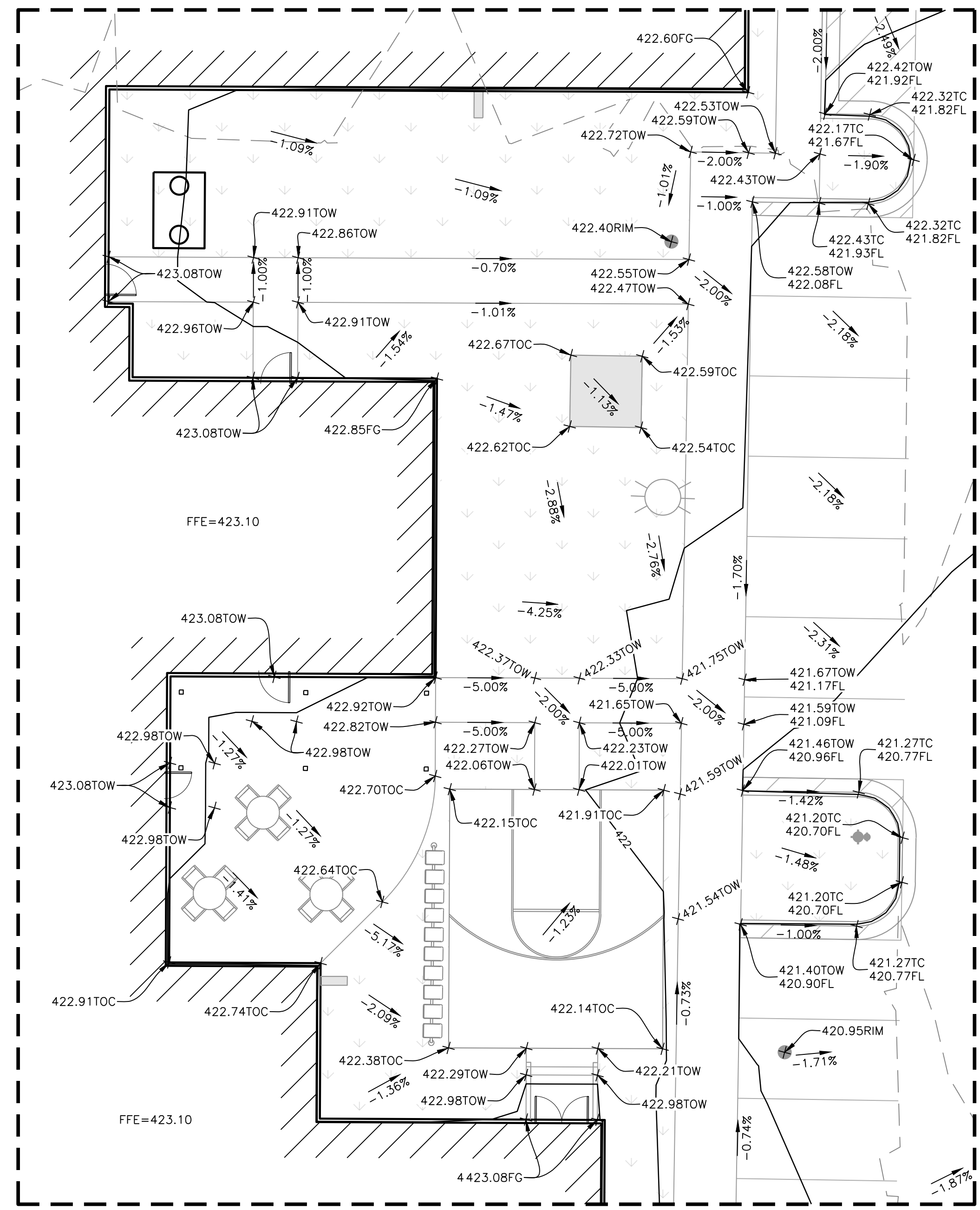
**HOMWOOD SUITES
5 STORIES - 108 UNITS
122 STALLS**

FFE=423.10

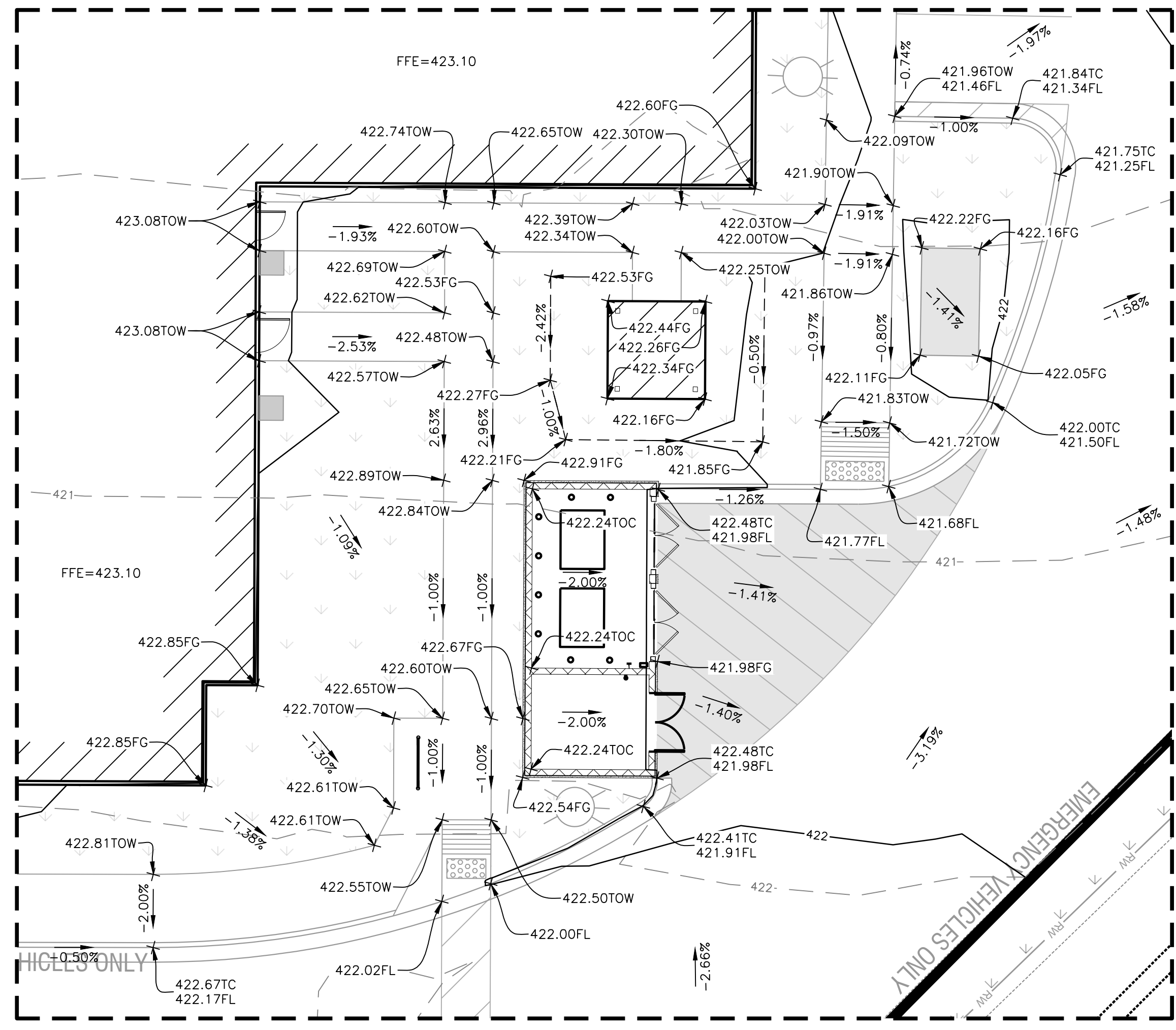
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1 GRADING PLAN DETAIL
SCALE: 1"=10'

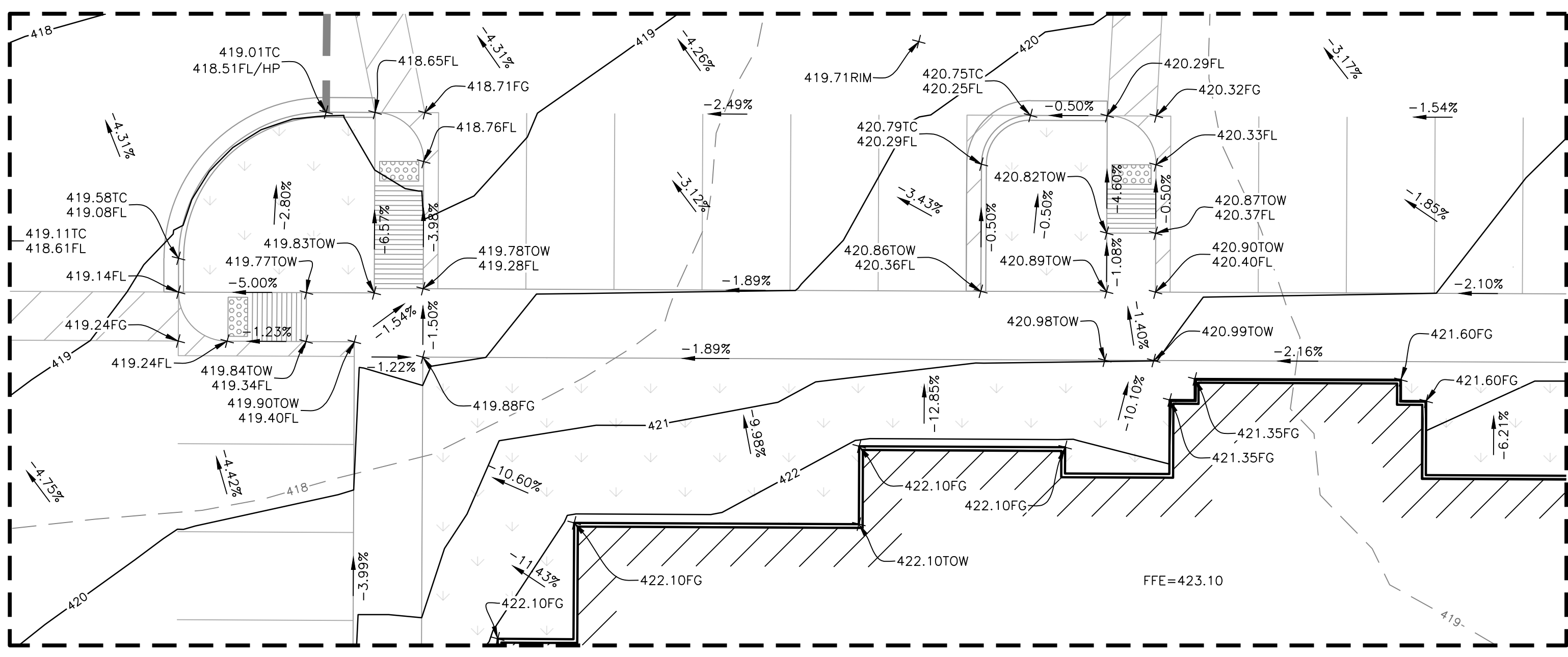


2 GRADING PLAN DETAIL
SCALE: 1"=10'



3 GRADING PLAN DETAIL
SCALE: 1"=10'

NEW CURB	GRADE BREAK: HIGH POINT
FFE	FINISHED FLOOR ELEVATION
FG	FINISH GROUND
FL	FLOWLINE
HP	HIGH POINT
INV	STRUCTURE INVERT ELEVATION
LP	LOW POINT
ME	MATCH EXISTING GROUND
RIM	STRUCTURE RIM ELEVATION
TC	TOP OF CURB
TOC	TOP OF CONCRETE
TW	TOP OF WALK



4 GRADING PLAN DETAIL
SCALE: 1"=10'

REVISIONS
07-15-21 - CITY COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373



LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	11 OF 23

APPROVED
BY: *Jonathan M. Lowry*
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021
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CITY COMMENTS - 07-13-21
ADDED CoP APPROVAL STAMP

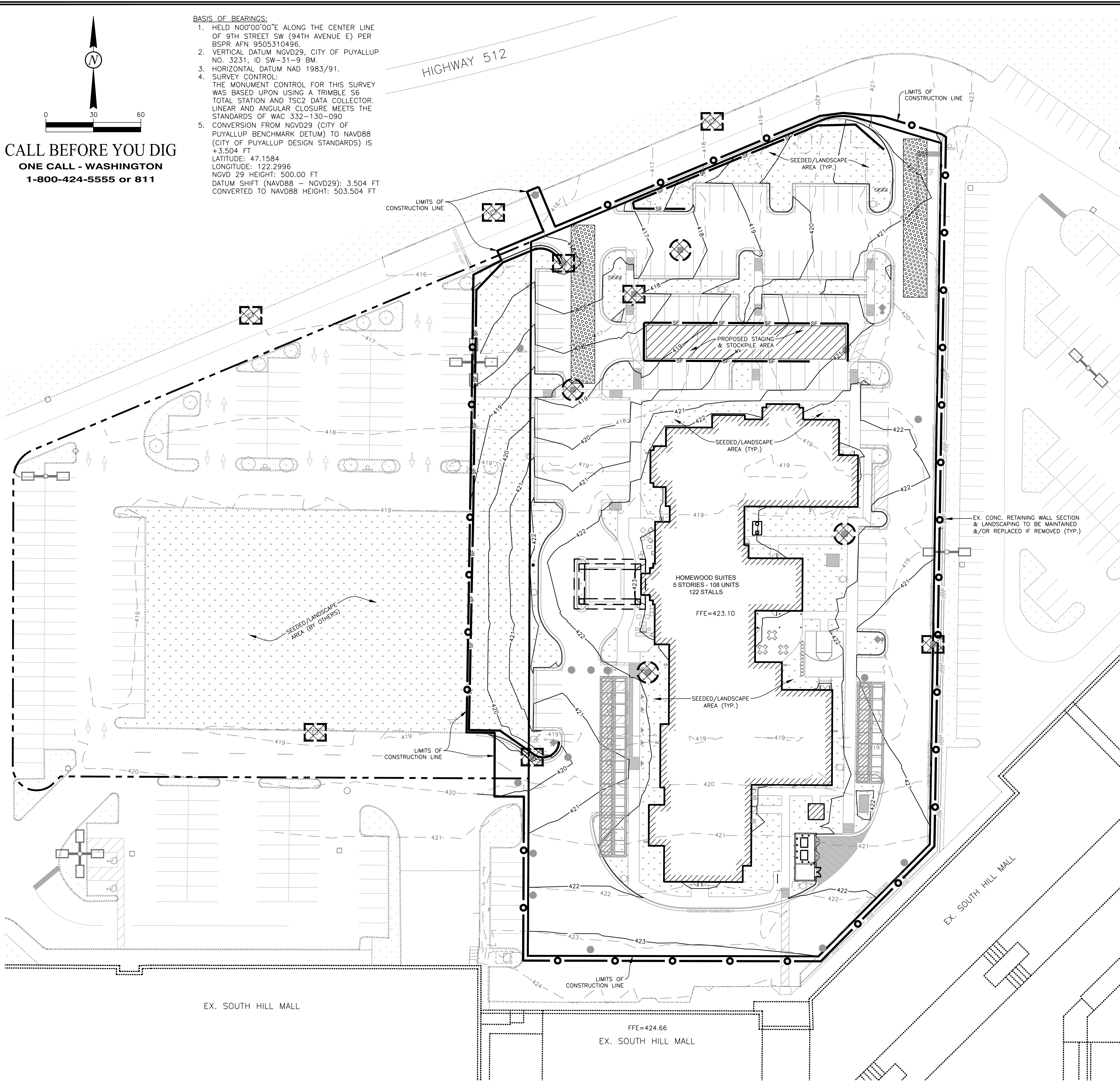
GRADING PLAN DETAILS

C-5.3

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 CONVERTED TO NAVD88 HEIGHT: 503.504 FT



EROSION CONTROL LEGEND		
	LIMITS OF CONSTRUCTION	3.16 AC
	SILT FENCE	623 LF
	SEEDING & HYDROMULCH	3,757 SY
	CURB INLET PROTECTION	8 EA
	STANDARD INLET PROTECTION	4 EA
	STABILIZED CONSTRUCTION ENTRANCE	2 EA

- NOTES:**
1. CONTRACTOR SHALL FOLLOW CITY OF PUYALLUP AND DEPARTMENT OF ECOLOGY STORMWATER POLLUTION PREVENTION STANDARDS FOR ALL EROSION CONTROL DURING CONSTRUCTION.
 2. SILT FENCE SHALL BE INSTALLED PER DEPARTMENT OF ECOLOGY DETAIL SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN DETAILS SHEET C-6.1.
 3. INLET PROTECTION SHALL BE INSTALLED PER DEPARTMENT OF ECOLOGY DETAILS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN DETAILS SHEET C-6.1.
 4. CONTRACTOR SHALL PROVIDE APPROVED CONCRETE WASHOUT PER DEPARTMENT OF ECOLOGY DETAIL SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN DETAILS SHEET C-6.1.
 5. REFER TO LANDSCAPE PLAN FOR PERMANENT STABILIZATION AND SEEDING DETAILS.

CONSTRUCTION SEQUENCE:
 ALL ESC PLANS SHALL INCLUDE A "CONSTRUCTION SEQUENCE" SCHEDULE WHICH OUTLINES THE PROPER SEQUENCE AND MAINTENANCE REQUIREMENTS FOR ESC IN CONJUNCTION WITH THE CONSTRUCTION OF THE PROJECT. THE FOLLOWING "CONSTRUCTION SEQUENCE" IS TO BE USED AS A GUIDE, ALTHOUGH EACH INDIVIDUAL PROJECT IS UNIQUE AND WILL REQUIRE ITS OWN "CONSTRUCTION SEQUENCE" SCHEDULE:

1. HOLD A PRECONSTRUCTION MEETING WITH THE CITY AND OBTAIN REQUIRED PERMITS.
2. ESTABLISH CLEARING AND GRADING LIMITS.
3. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE.
4. CONSTRUCT PERIMETER DITCHES, SILT FENCES, AND OTHER EROSION CONTROL DEVICES AS SHOWN.
5. CONSTRUCT PROTECTION DEVICES FOR CRITICAL AREAS AND SIGNIFICANT TREES PROPOSED FOR RETENTION.
6. SCHEDULE AN EROSION CONTROL INSPECTION WITH THE CITY.
7. CONSTRUCT STORM DRAINAGE RETENTION/DETENTION (CONTROL AND STORAGE) FACILITIES. PROVIDE EMERGENCY OVERFLOW AS APPLICABLE.
8. ALL DITCHES AND SWALES AS SHOWN SHALL BE PROVIDED TO DIRECT ALL SURFACE WATER TO THE RETENTION/DETENTION AND SEDIMENTATION POND AS CLEARING AND GRADING PROGRESSES. NO UNCONTROLLED SURFACE WATER SHALL BE ALLOWED TO LEAVE THE SITE OR BE DISCHARGED TO A CRITICAL AREA AT ANY TIME DURING THE GRADING OPERATIONS.
9. CLEARLY STATE AT WHAT POINT GRADING ACTIVITIES CAN BEGIN, USUALLY ONLY AFTER ALL DRAINAGE AND EROSION CONTROL MEASURES ARE IN PLACE.
10. IDENTIFY EROSION CONTROL MEASURES WHICH REQUIRE REGULAR MAINTENANCE.

LOWRY
 ENGINEERING
 1111 WESTRAC DRIVE - SUITE 108
 FARGO, NORTH DAKOTA 58103

REVISIONS
07-15-21 - CITY COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

JONATHAN M. LOWRY
 STATE OF WASHINGTON
 56042
 REGISTERED
 PROFESSIONAL ENGINEER
 11/05/21

LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	12 OF 23

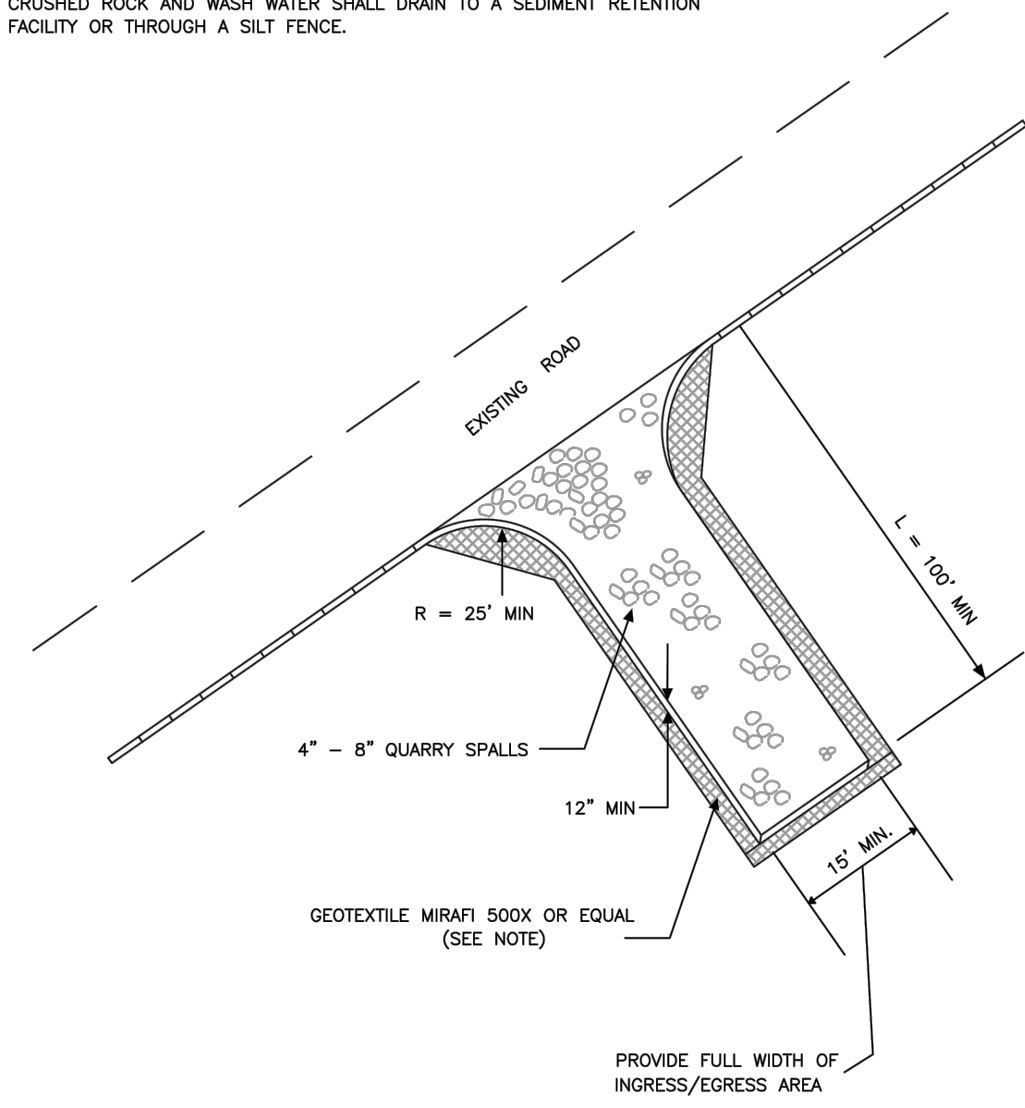
EROSION & SEDIMENT CONTROL PLAN
C-6

- CITY COMMENTS - 07-13-21**
- ADDED CONSTRUCTION SEQUENCE WERE
 - ADDED PER SECTION 501.6
 - ADDED CoP APPROVAL STAMP

APPROVED
 BY: *[Signature]*
 CITY OF PUYALLUP
 ENGINEERING SERVICES
 DATE: 11/15/2021
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11/05/21 09:08:04AM Z:\Lowry Shared Files\Projects - 2018\18009.1 - Puyallup, WA\Drawings\18009.1 - Project Design\18009.1_C.dwg

- NOTE:**
1. GEOTEXTILE MIRAFI 500 X OR APPROVED EQUAL SHALL BE PLACED UNDER THE ENTIRETY OF THE TEMPORARY ENTRANCE.
 2. ADDITIONAL ROCK SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
 3. IF THE PAD DOES NOT ADEQUATELY REMOVE THE MUD FROM THE VEHICLE'S 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 A SILT FENCE.



CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

TEMPORARY CONSTRUCTION ENTRANCE

DESIGNED BY	CHECKED BY	APPROVED BY	DATE APPROVED	SCALE	CITY SCHEDULE
05.01.01					

1. ALL LIMITS OF CLEARING AND AREAS OF VEGETATION PRESERVATION AS PRESCRIBED ON THE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD AND OBSERVED DURING CONSTRUCTION.
2. ALL REQUIRED SEDIMENTATION AND EROSION CONTROL FACILITIES MUST BE CONSTRUCTED AND IN OPERATION PRIOR TO ANY LAND CLEARING AND/OR OTHER CONSTRUCTION TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE NATURAL DRAINAGE SYSTEM. THE CONTRACTOR SHALL SCHEDULE AN INSPECTION OF THE EROSION CONTROL FACILITIES PRIOR TO ANY LAND CLEARING AND/OR CONSTRUCTION. ALL EROSION AND SEDIMENT FACILITIES SHALL BE MAINTAINED IN A SATISFACTORY CONDITION AS DETERMINED BY THE CITY, UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED. THE IMPLEMENTATION, MAINTENANCE, REPLACEMENT, AND ADDITIONS TO THE EROSION AND SEDIMENTATION CONTROL SYSTEMS SHALL BE THE RESPONSIBILITY OF THE PERMITEE.
3. THE EROSION AND SEDIMENTATION CONTROL SYSTEM FACILITIES DEPICTED ON THESE PLANS ARE INTENDED TO BE MINIMUM REQUIREMENTS TO MEET ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND UNEXPECTED OR SEASONAL CONDITIONS DICTATE, FACILITIES WILL BE NECESSARY TO ENSURE COMPLETE SILTATION CONTROL ON THE SITE. DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE PERMITEE TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES, OVER AND ABOVE THE MINIMUM REQUIREMENTS, AS MAY BE NEEDED TO PROTECT ADJACENT PROPERTIES, SENSITIVE AREAS, NATURAL WATER COURSES, AND/OR STORM DRAINAGE SYSTEMS.
4. APPROVAL OF THESE PLANS IS FOR GRADING, TEMPORARY DRAINAGE, EROSION AND SEDIMENTATION CONTROL ONLY. IT DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT STORM DRAINAGE DESIGN, SIZE OR LOCATION OF PIPES, RESTRICTORS, CHANNELS, OR RETENTION FACILITIES.
5. ANY DISTURBED AREA WHICH HAS BEEN STRIPPED OF VEGETATION AND WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF 30 DAYS OR MORE, MUST BE IMMEDIATELY STABILIZED WITH MULCHING, GRASS PLANTING, OR OTHER APPROVED EROSION CONTROL TREATMENT APPLICABLE TO THE TIME OF YEAR IN QUESTION. GRASS SEEDING ALONE WILL BE ACCEPTABLE ONLY DURING THE MONTHS OF APRIL THROUGH SEPTEMBER INCLUSIVE. SEEDING MAY PROCEED OUTSIDE THE SPECIFIED TIME PERIOD WHENEVER IT IS IN THE INTEREST OF THE PERMITEE BUT MUST BE AUGMENTED WITH MULCHING, NETTING, OR OTHER TREATMENT APPROVED BY THE CITY.
6. IN CASE EROSION OR SEDIMENTATION OCCURS TO ADJACENT PROPERTIES, ALL CONSTRUCTION WORK WITHIN THE DEVELOPMENT THAT WILL FURTHER AGGRAVATE THE SITUATION MUST CEASE, AND THE OWNER/CONTRACTOR WILL IMMEDIATELY COMMENCE RESTORATION METHODS. RESTORATION ACTIVITY WILL CONTINUE UNTIL SUCH TIME AS THE AFFECTED PROPERTY OWNER IS SATISFIED.
7. NO TEMPORARY OR PERMANENT STOCKPILING OF MATERIALS OR EQUIPMENT SHALL OCCUR WITHIN CRITICAL AREAS OR ASSOCIATED BUFFERS, OR THE CRITICAL ROOT ZONE FOR VEGETATION PROPOSED FOR RETENTION.

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

GRADING, EROSION, AND SEDIMENTATION CONTROL NOTES

DESIGNED BY	CHECKED BY	APPROVED BY	DATE APPROVED	SCALE	CITY SCHEDULE
05.02.01					

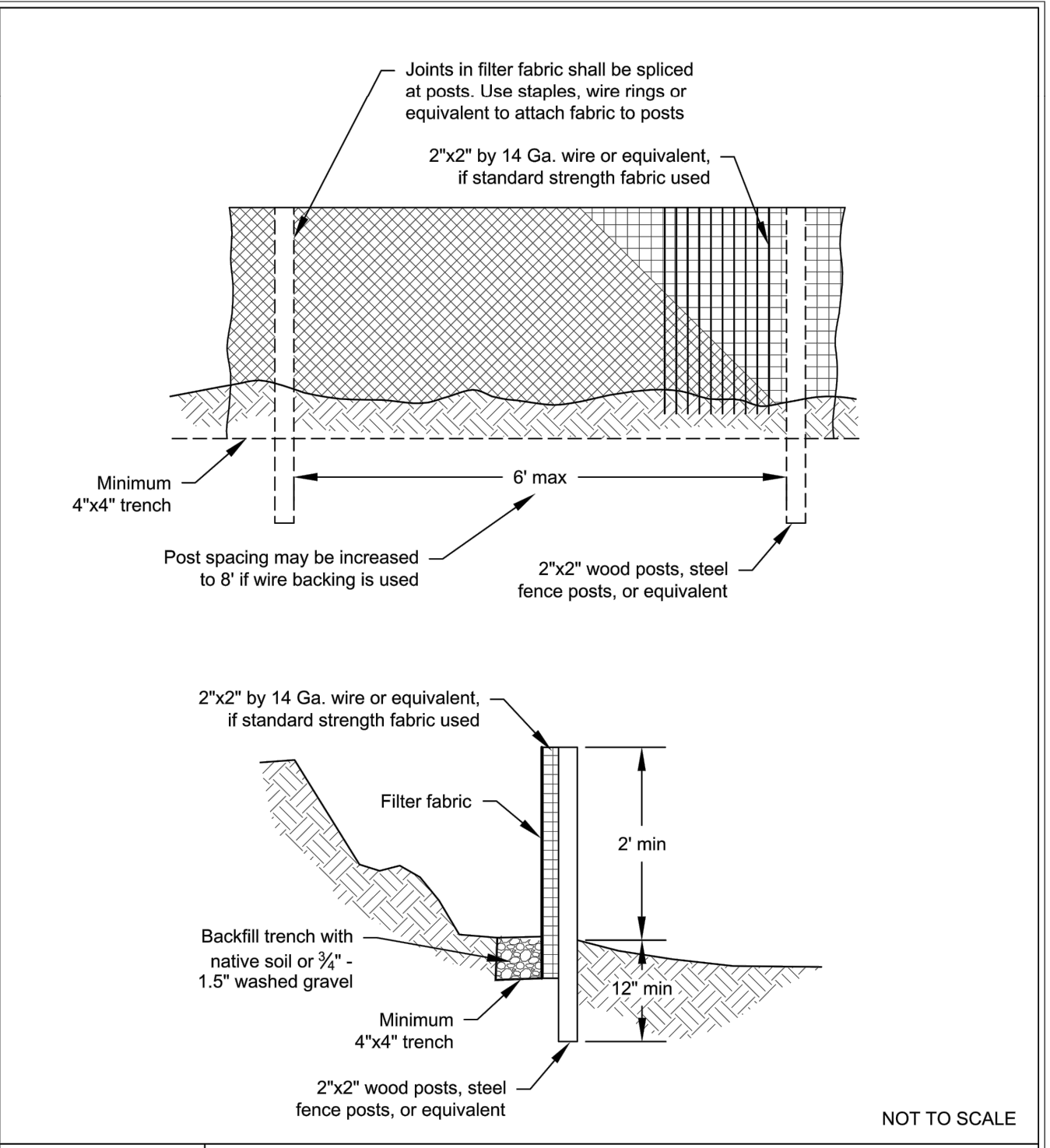


Figure II-4.2.12 Silt Fence
Revised October 2014

DEPARTMENT OF ECOLOGY
State of Washington

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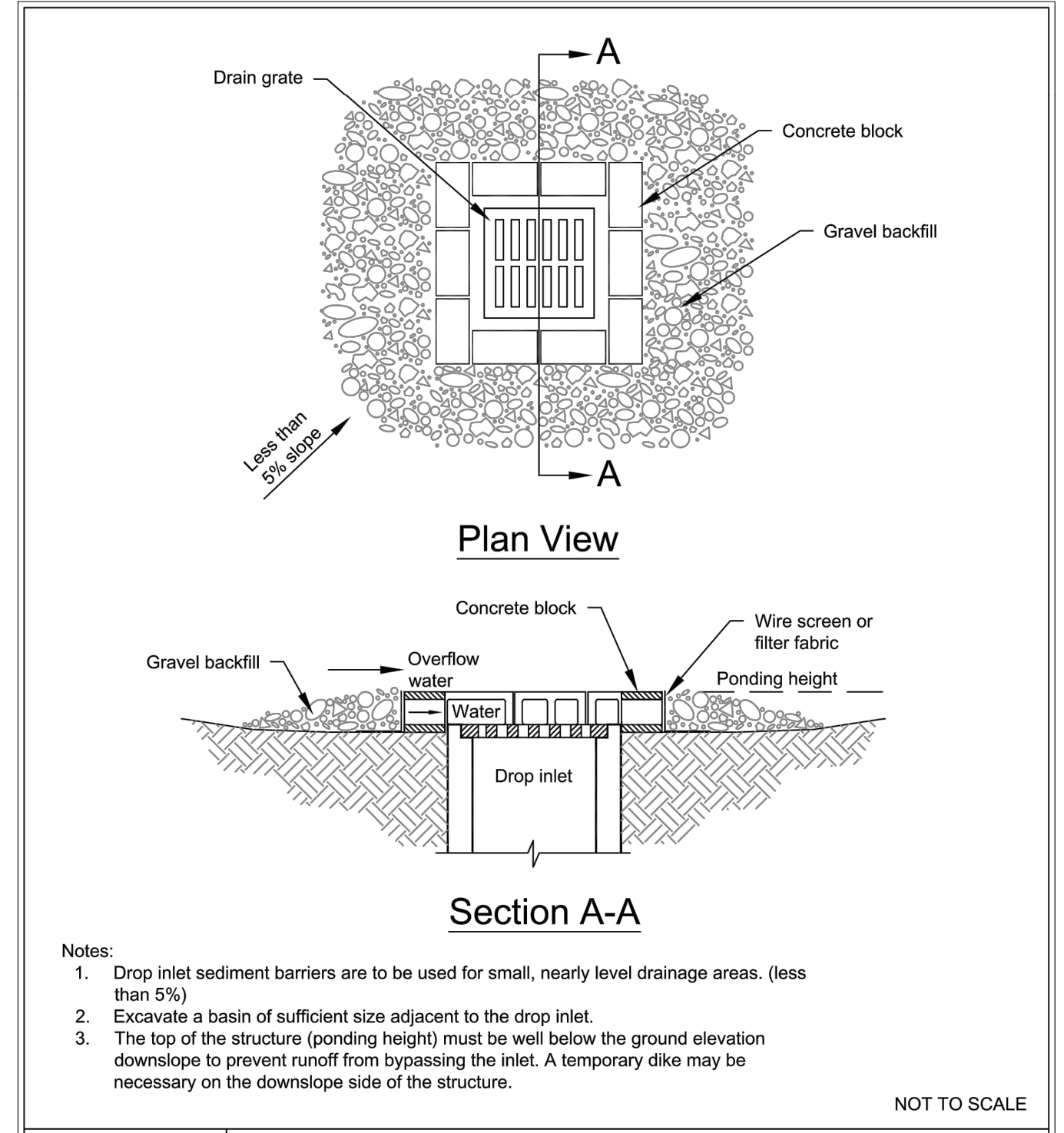


Figure II-4.2.8 Block and Gravel Filter
Revised August 2015

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State of Washington

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Notes:
1. Drop inlet sediment barriers are to be used for small, nearly level drainage areas. (less than 5%)
2. Excavate a basin of sufficient size adjacent to the drop inlet.
3. The top of the structure (ponding height) must be well below the ground elevation downslope to prevent runoff from bypassing the inlet. A temporary dike may be necessary on the downslope side of the structure.

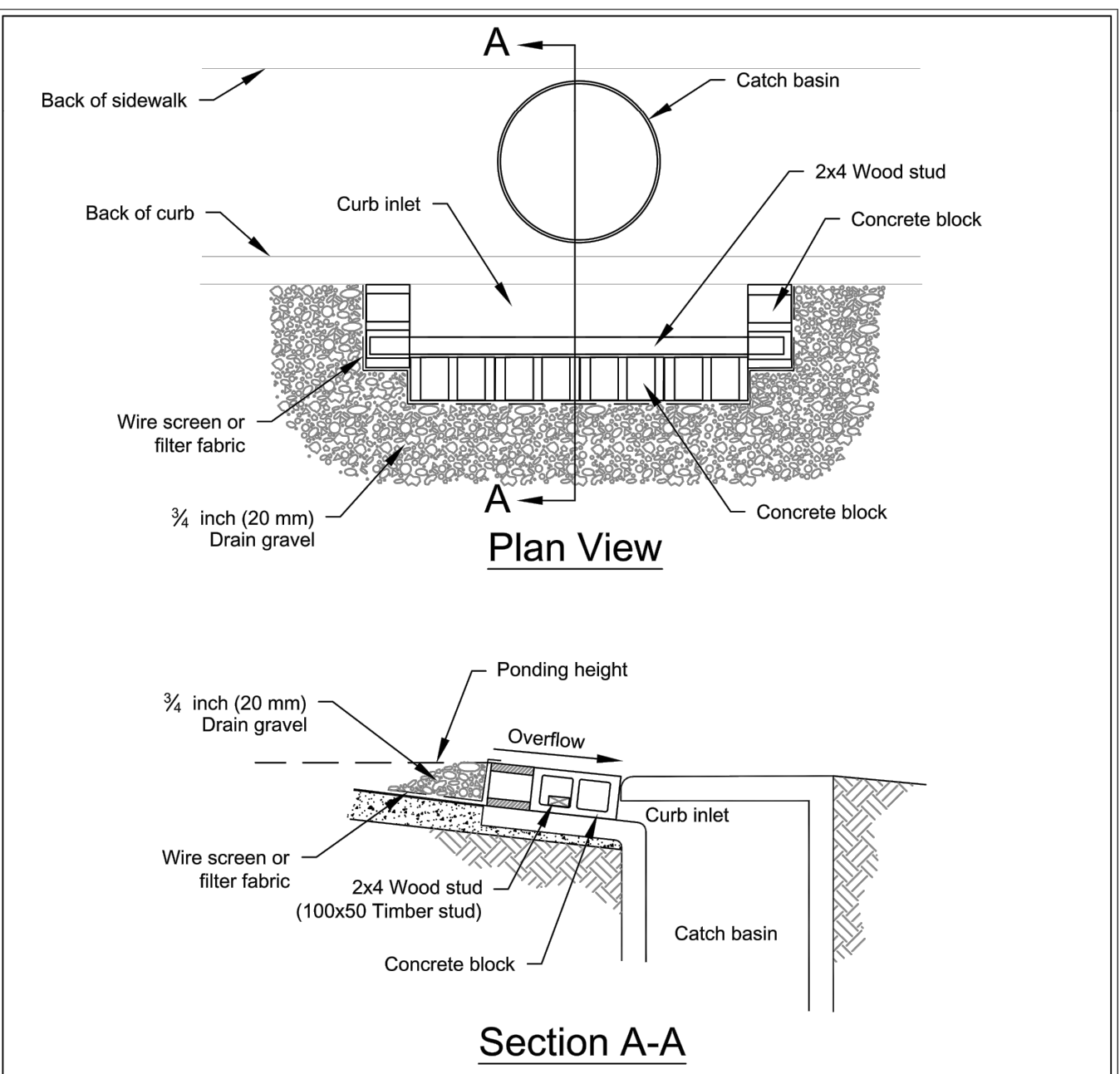


Figure II-4.2.9 Block and Gravel Curb Inlet Protection
Revised August 2015

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Notes:
1. Use block and gravel type sediment barrier when curb inlet is located in gently sloping street segment, where water can pond and allow sediment to separate from runoff.
2. Barrier shall allow for overflow from severe storm event.
3. Inspect barriers and remove sediment after each storm event. Sediment and gravel must be removed from the traveled way immediately.

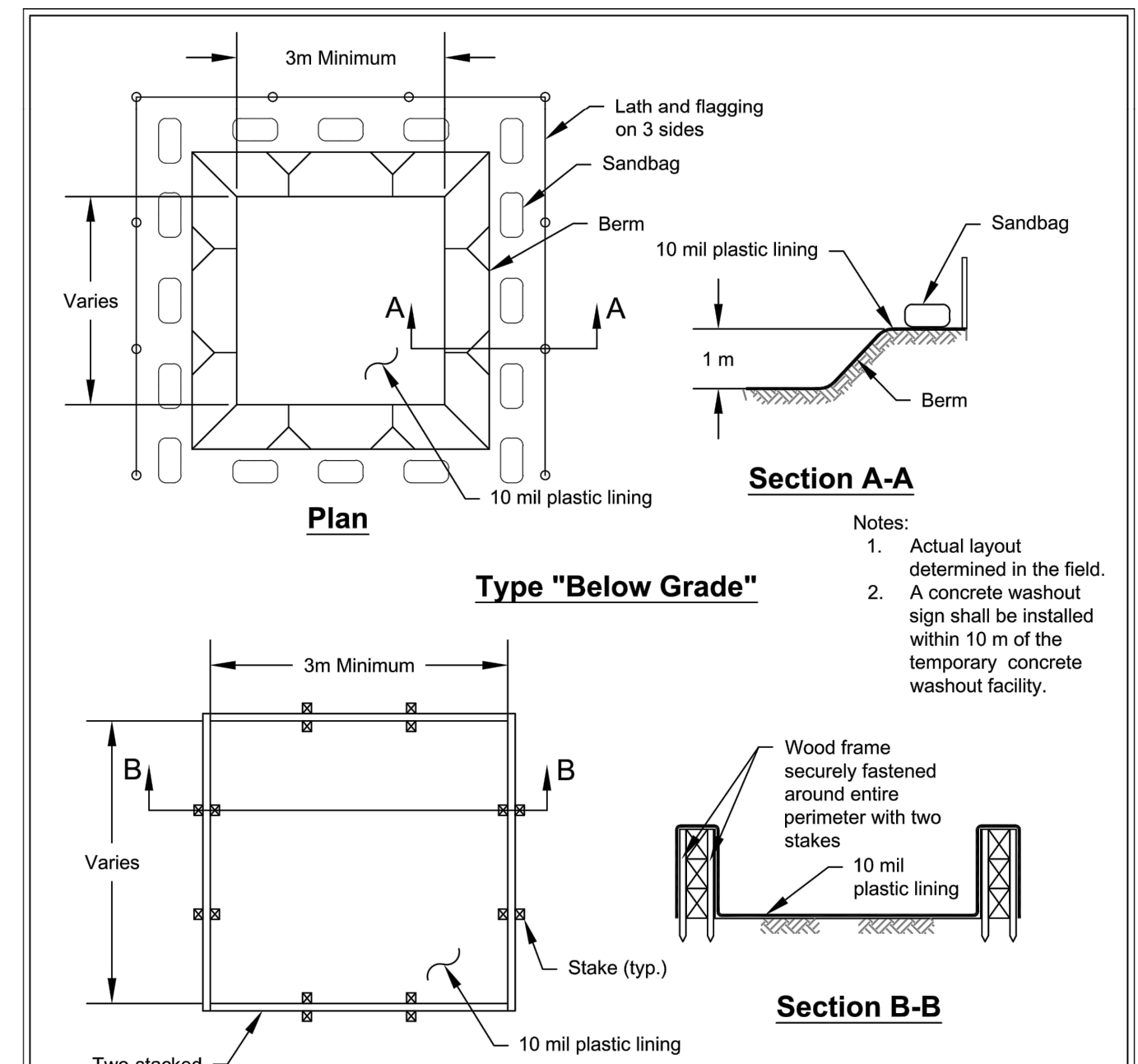


Figure II-4.1.7a Concrete Washout Area
Revised June 2015

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State of Washington

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Notes:
1. Actual layout determined in the field.
2. A concrete washout sign shall be installed within 10 m of the temporary concrete washout facility.

LOWRY ENGINEERING
1111 WESTRAC DRIVE - SUITE 108
FARGO, NORTH DAKOTA 58503

REVISIONS

07-15-21	CITY COMMENTS
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HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

JONATHAN M. LOWRY
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
56042
11/05/21

LE JOB #	18009.1
PROJECT DATE:	11/01/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	13 OF 23

EROSION & SEDIMENT CONTROL PLAN DETAILS

C-6.1

APPROVED

BY: *[Signature]*

CITY OF PUYALLUP
ENGINEERING SERVICES
11/15/2021

DATE: 11/15/2021

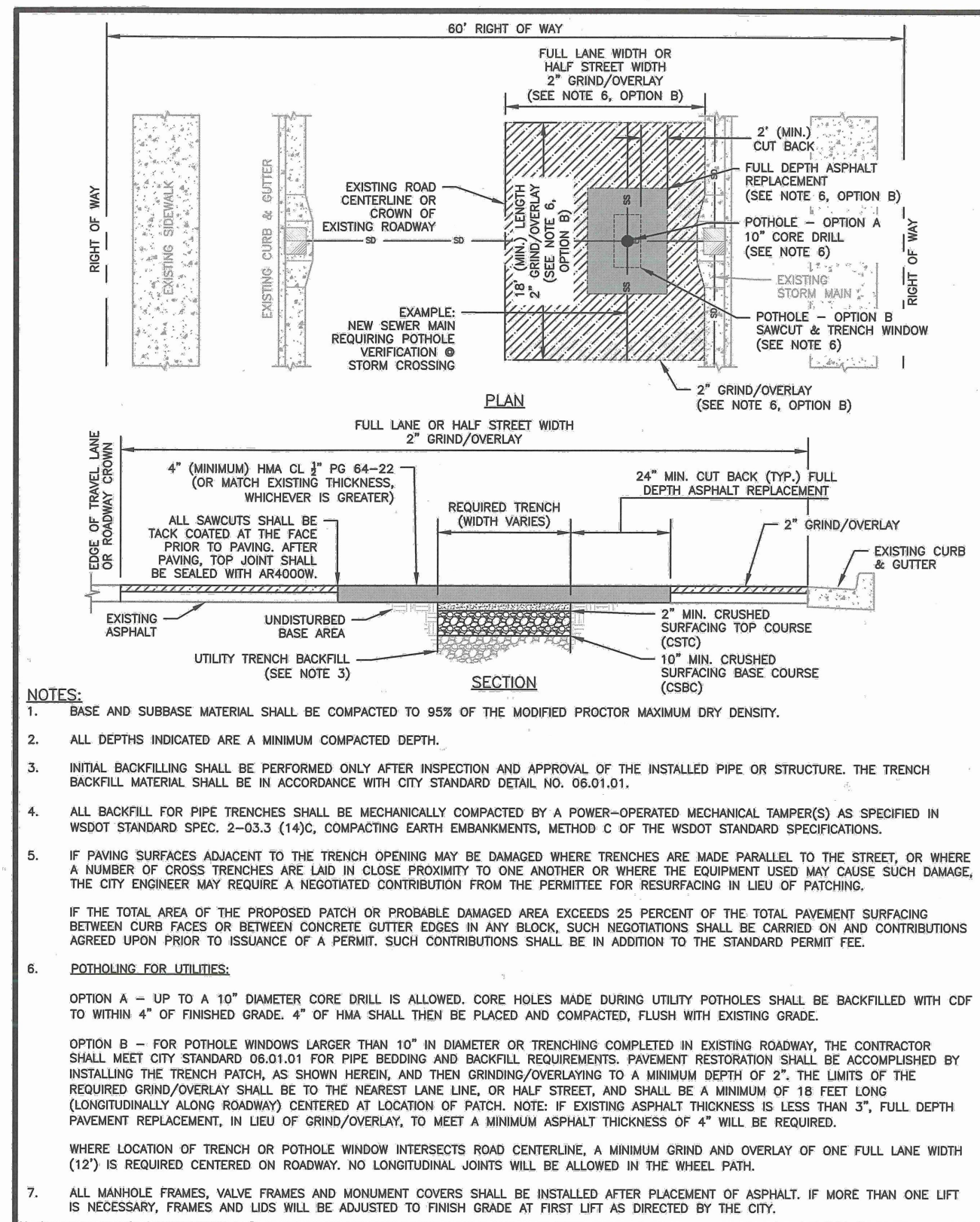
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FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

- ▲ CITY COMMENTS - 07-13-21
- ADDED DEPT. OF ECOLOGY BMP DETAILS
 - ADDED CoP APPROVAL STAMP

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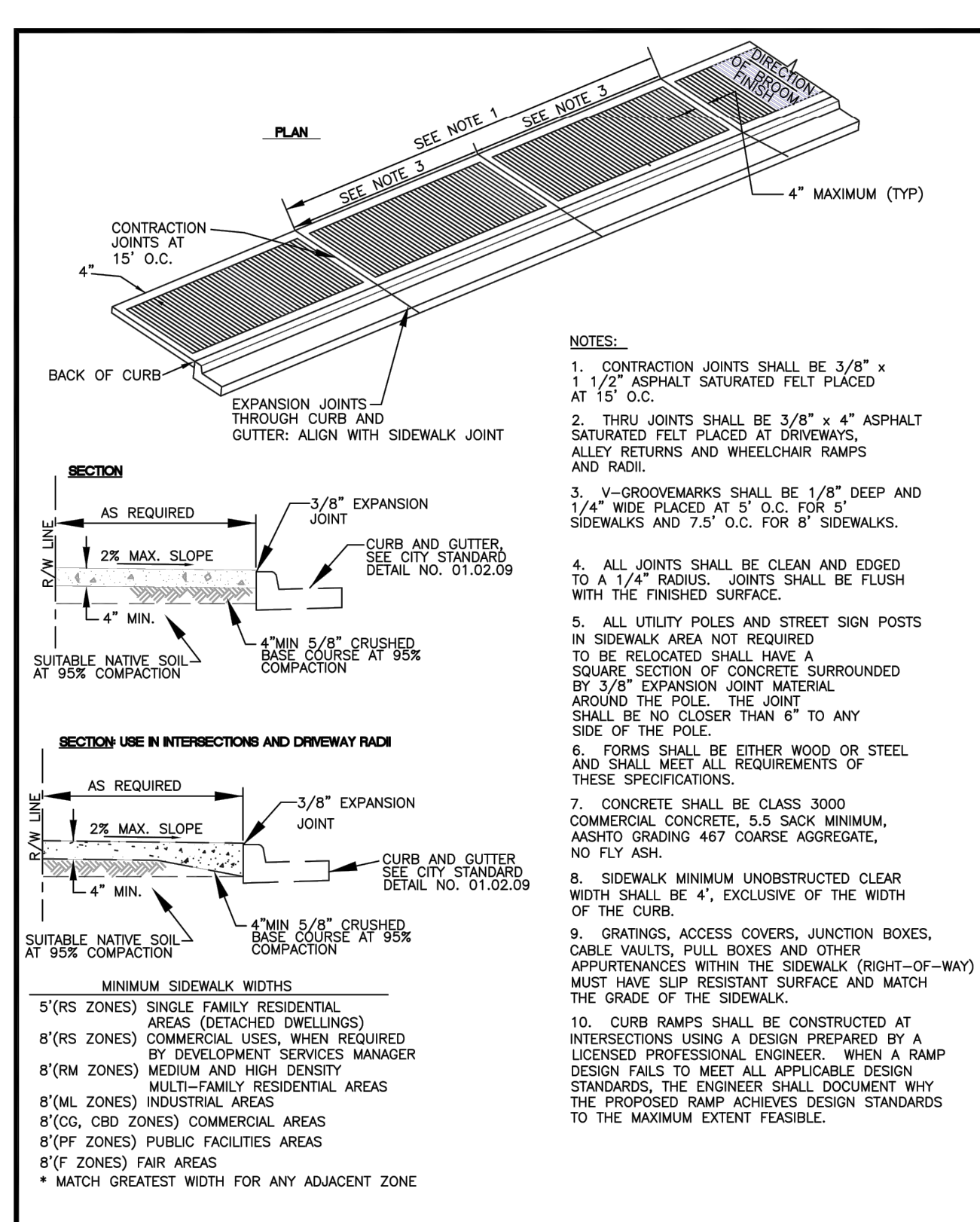
STREET PATCH

CITY OF PUYALLUP
OFFICE OF THE CITY ENGINEER

APPROVED FOR PUBLICATION

DATE: 01.01.20

CITY STANDARD



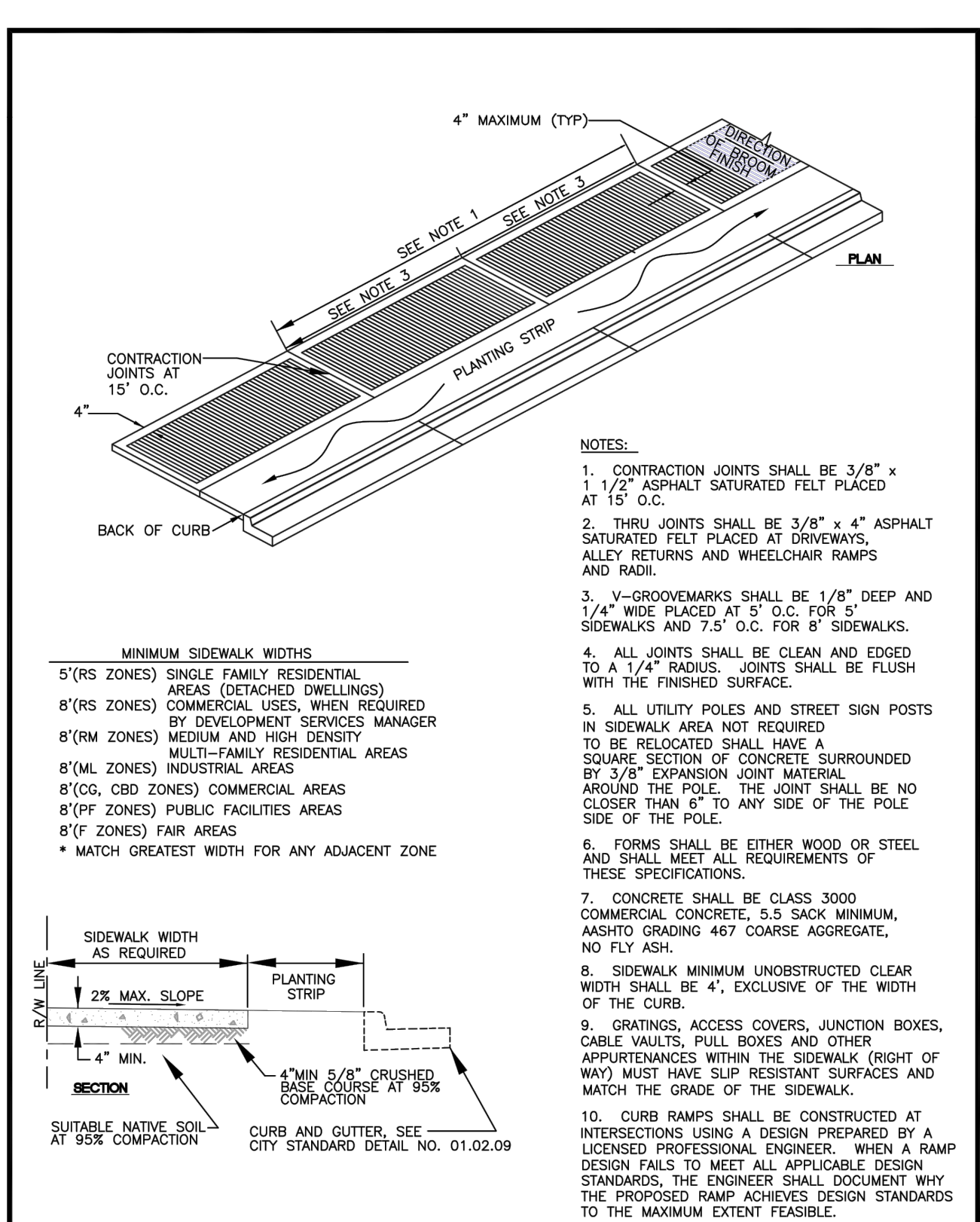
SIDEWALK WITHOUT PLANTING STRIP

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED FOR PUBLICATION

DATE: 01.02.01

CITY STANDARD



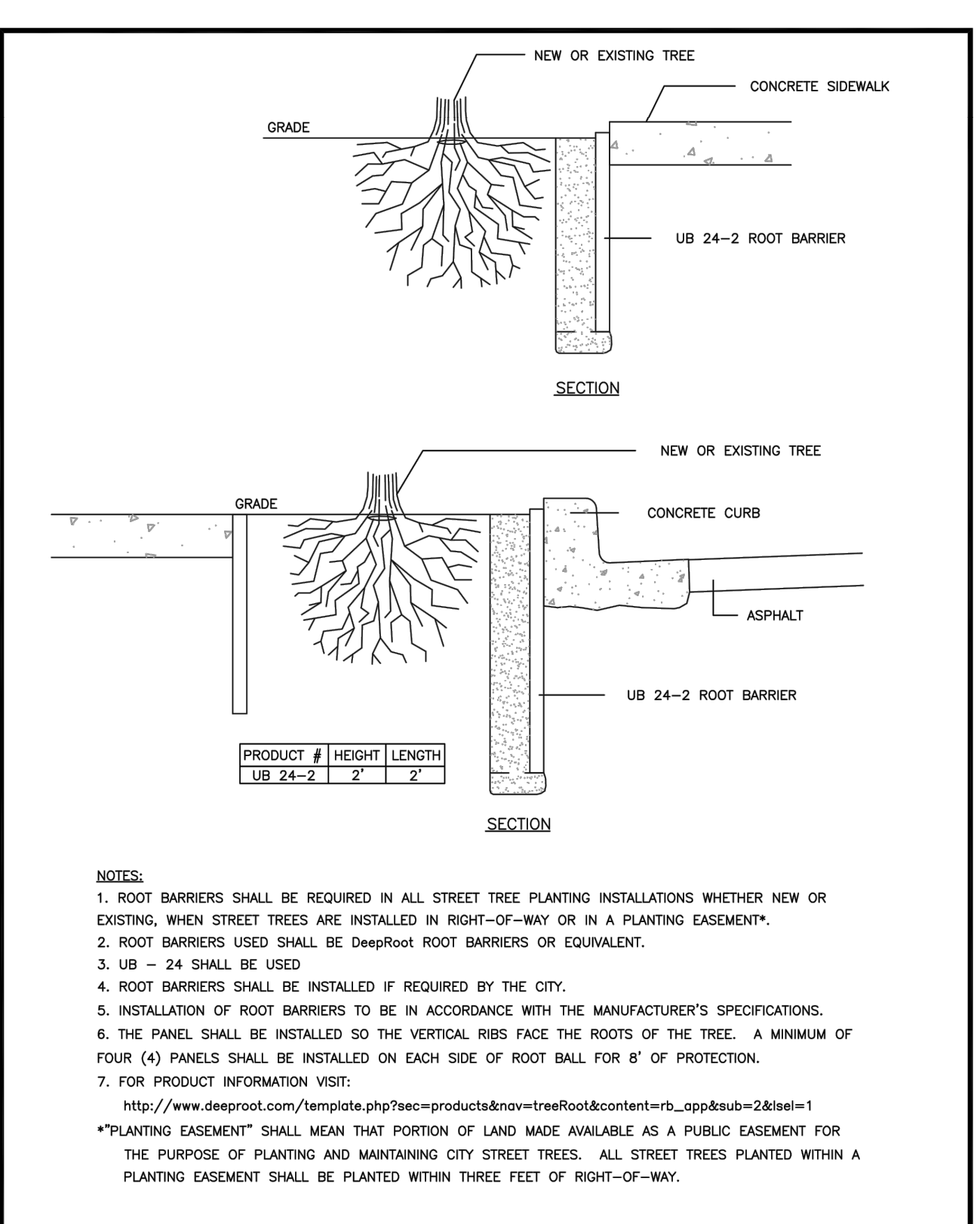
SIDEWALK WITH PLANTING STRIP

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

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DATE: 01.02.02

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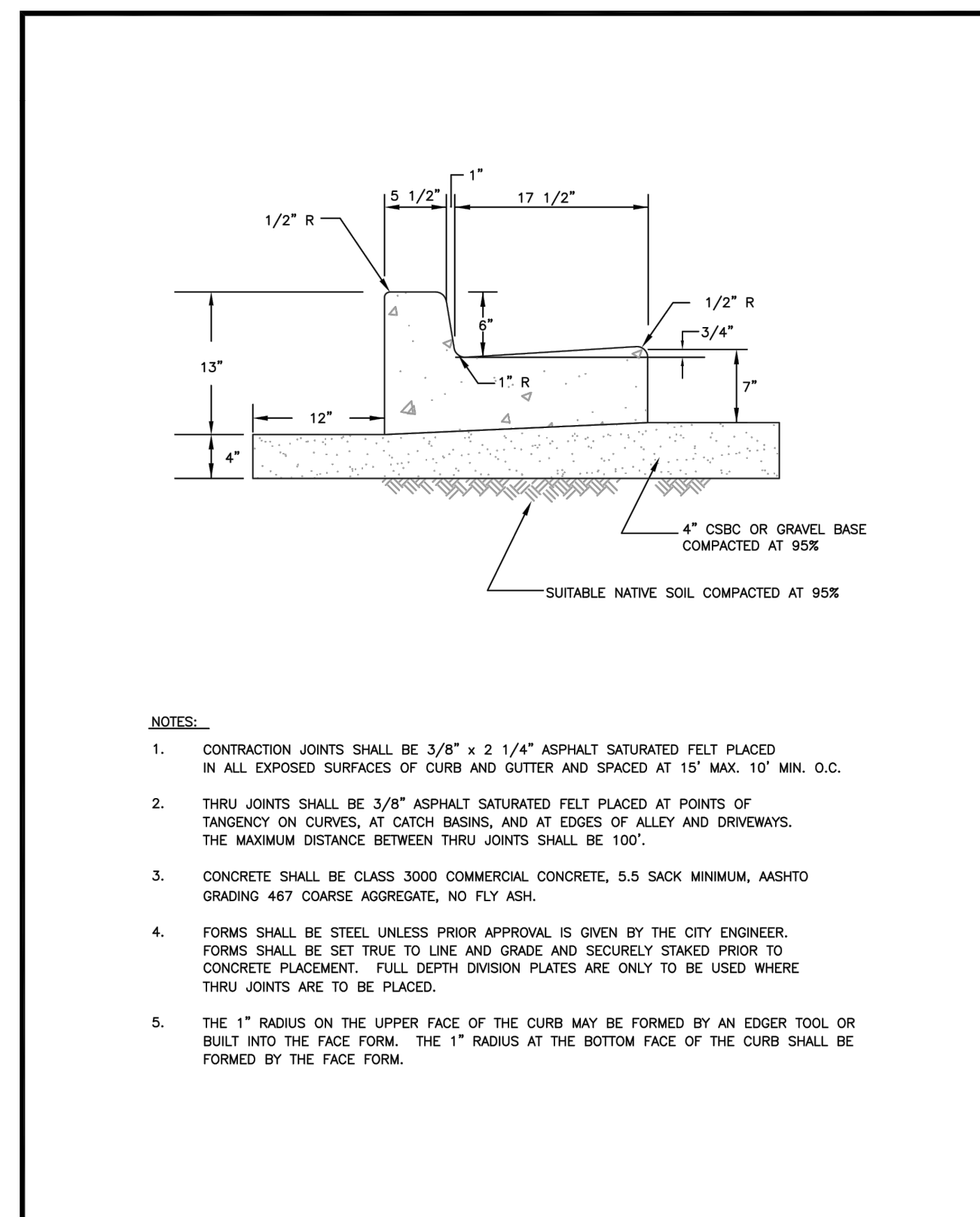
ROOT BARRIER DETAIL

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED FOR PUBLICATION

DATE: 01.02.03

CITY STANDARD



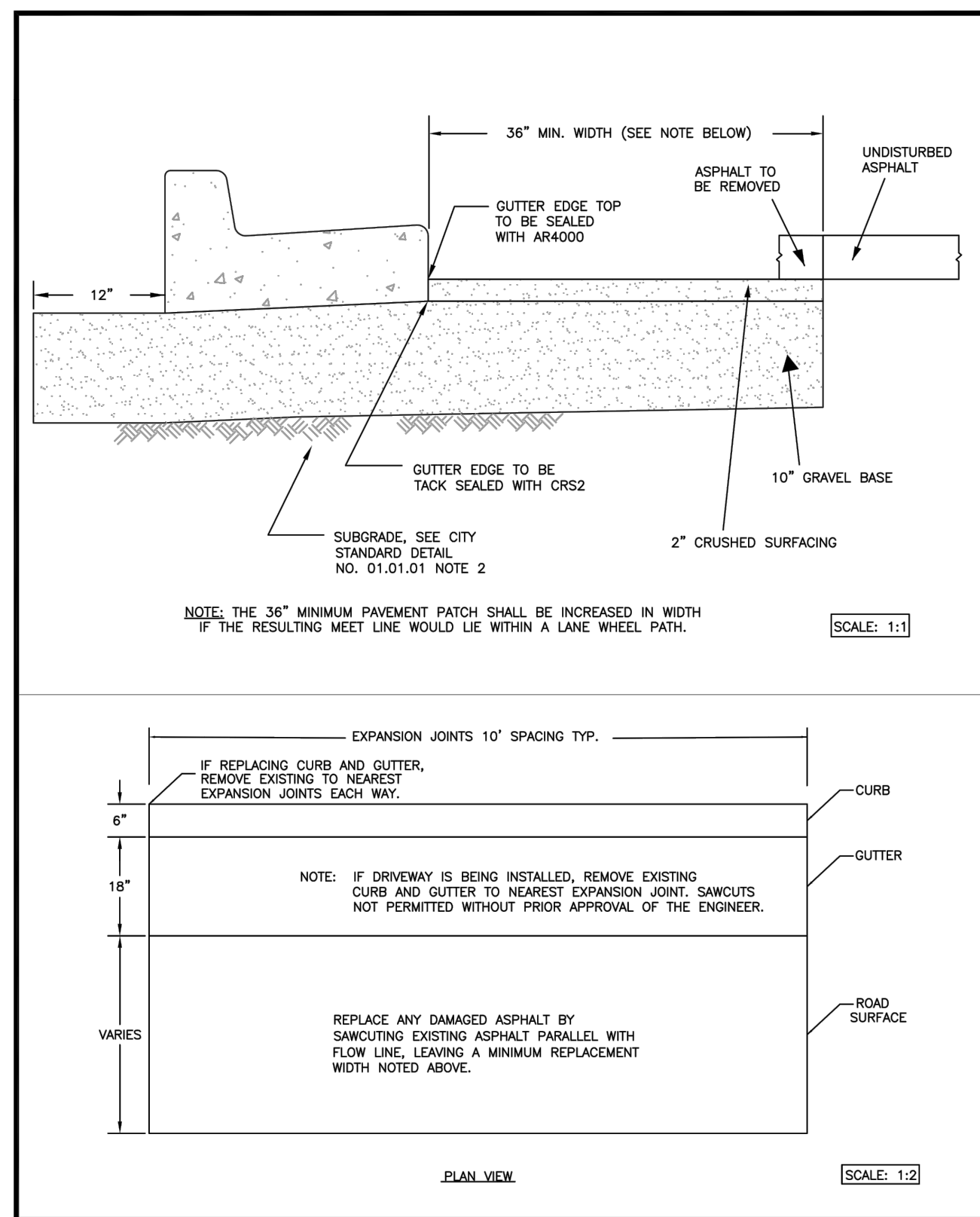
CURB AND GUTTER

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

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DATE: 01.02.09

CITY STANDARD



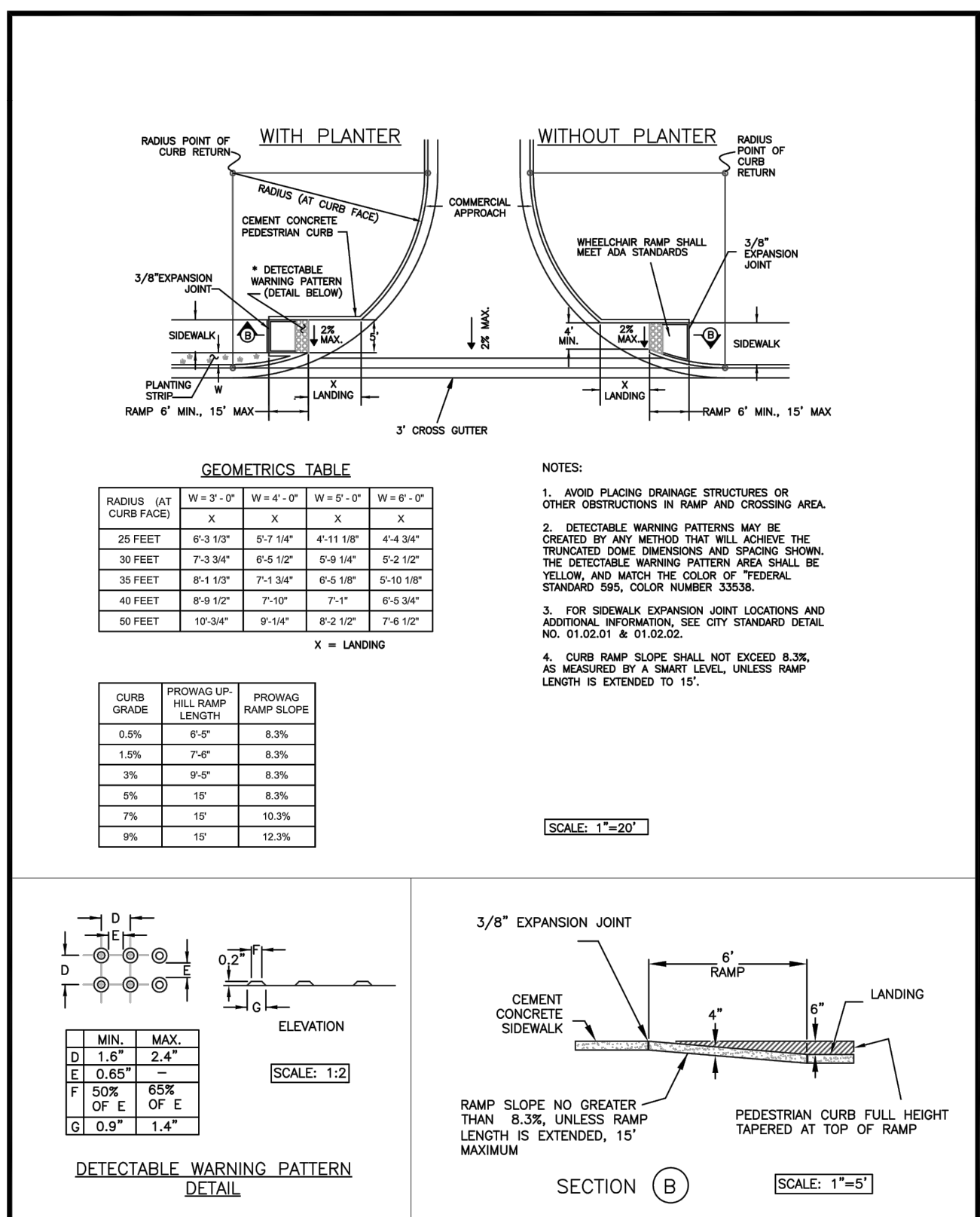
CURB CUT

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

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SIDEWALK RAMP WITH COMMERCIAL APPROACHES

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED FOR PUBLICATION

DATE: 01.02.19

CITY STANDARD

REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373



LE JOB # 18009.1

PROJECT DATE: 11/01/2021

CHECKED BY: JML

DRAWN BY: DMM

APPROVED BY: JML

SHEET: 14 OF 23

APPROVED

BY: *Jonathan M. Lowry*

CITY OF PUYALLUP
ENGINEERING SERVICES

DATE: 11/15/2021

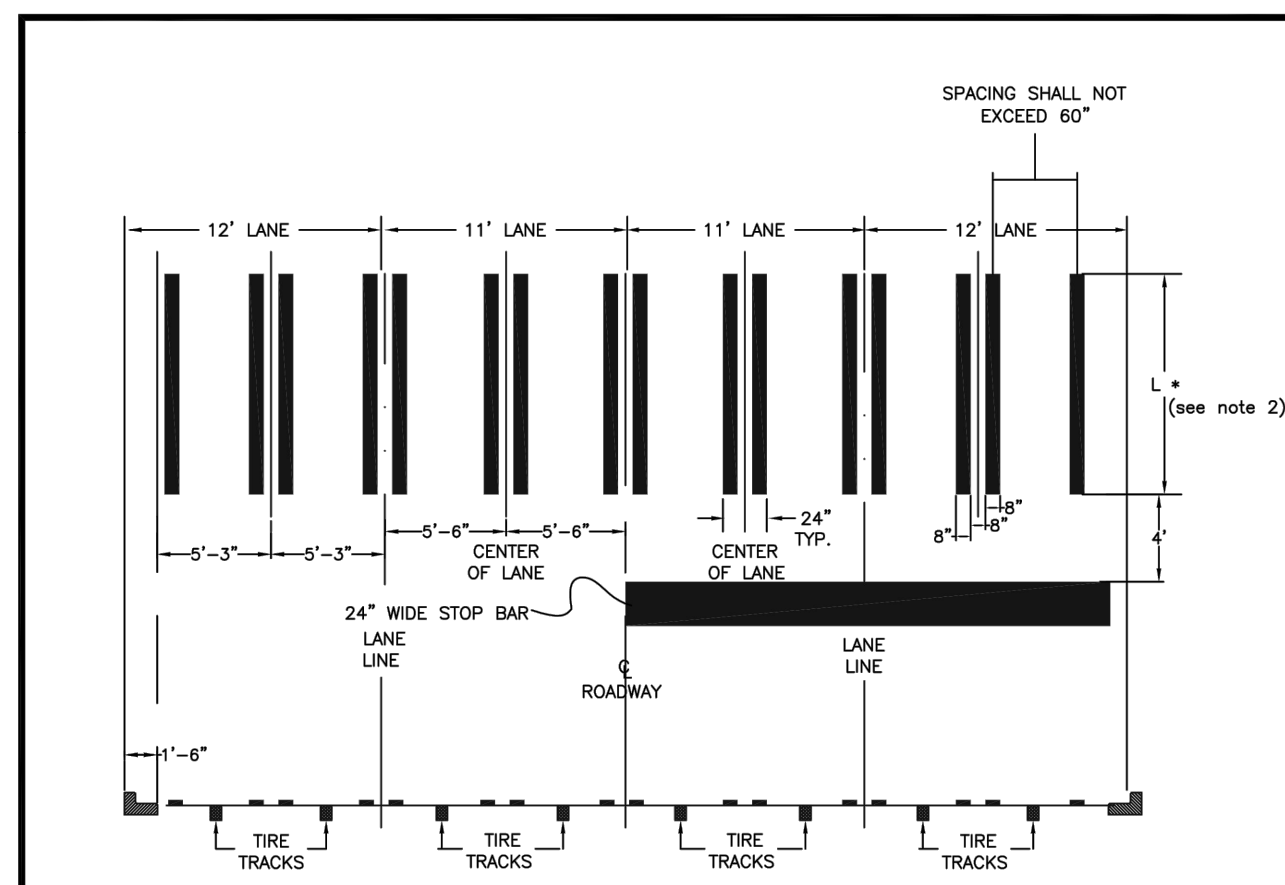
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CITY COMMENTS - 07-13-21
ADDED CoP APPROVAL STAMP

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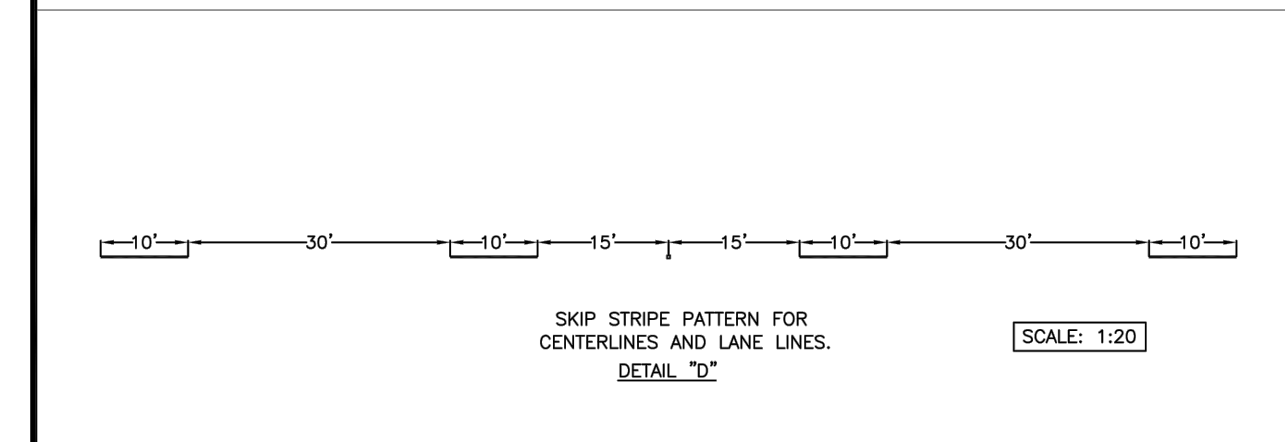
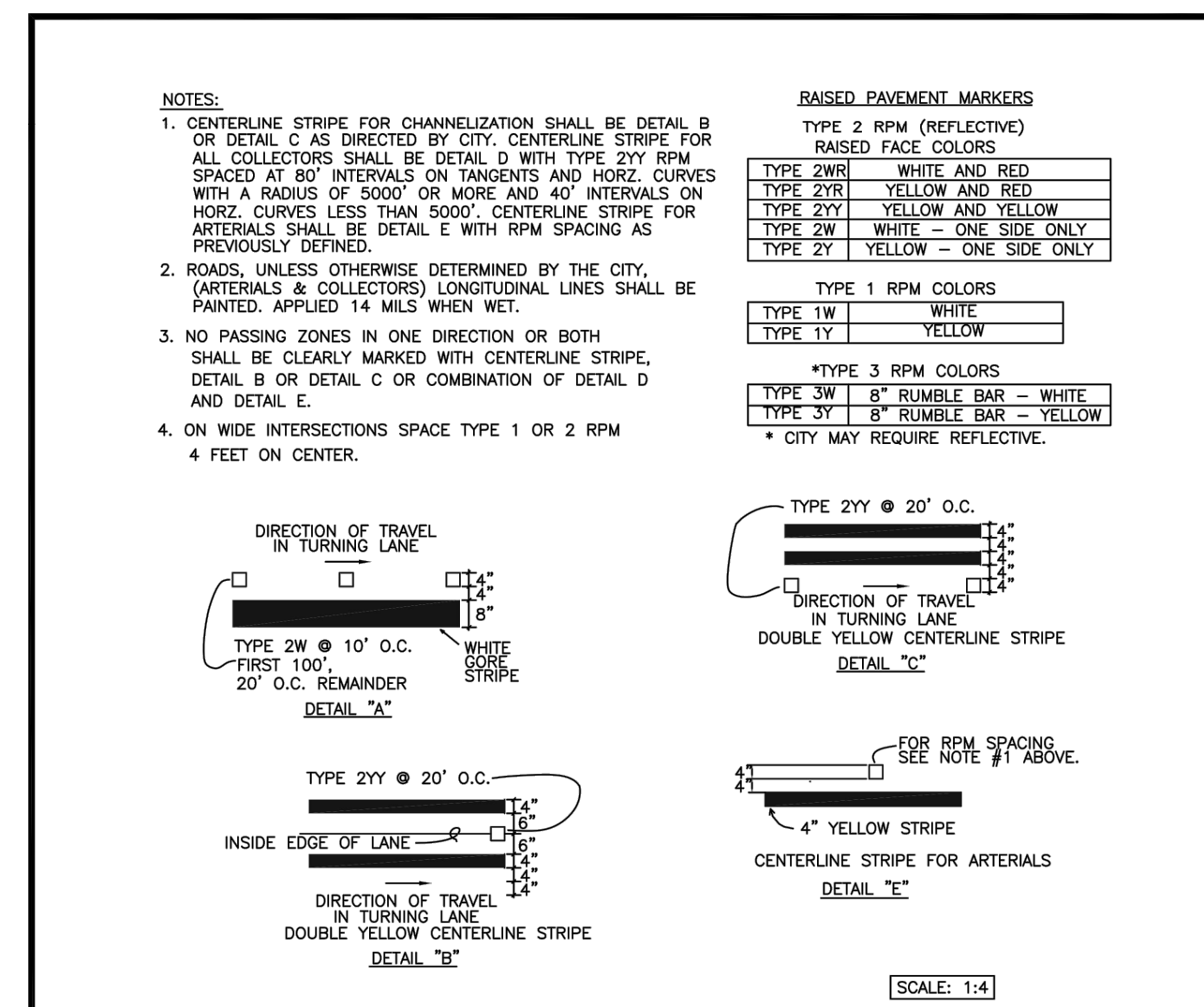


- NOTES:
- 1) FOR ALL ROADWAYS, THE LONGITUDINAL LINES SHALL BE CENTERED ON THE LANE LINES AND IN THE CENTER OF THE TRAVELED PORTION OF THE LANE TO MINIMIZE TIRE WEAR. THE SPACING BETWEEN THE LONGITUDINAL LINES SHALL NOT EXCEED 60".
 - 2) THE LENGTH OF A CROSSWALK SHALL BE 8' ACROSS RESIDENTIAL STREETS, 10' ACROSS COLLECTORS AND MINOR ARTERIALS AND 12' ACROSS PRINCIPAL ARTERIALS. HOWEVER, THE LENGTH OF A CROSSWALK SHALL BE 8' ACROSS SIDE STREETS ALONG COLLECTORS AND MINOR ARTERIALS AND 12' ACROSS SIDE STREETS ALONG PRINCIPAL ARTERIALS.
 - 3) STOP BAR WHEN USED WITH A CROSSWALK SHALL BE PLACED FOUR FEET IN ADVANCE OF AND PARALLEL TO THE CROSSWALK. ALL STOP BARS SHALL BE 24" WIDE.
 - 4) PAVEMENT MARKINGS, INCLUDING CROSSWALKS, SHALL BE TYPE A LIQUID HOT APPLIED THERMOPLASTIC, PER STANDARD SPECIFICATIONS, SECTION 9-34 PAVEMENT MARKING MATERIAL, 9-34.1 GENERAL.

CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

CROSSWALK DETAIL

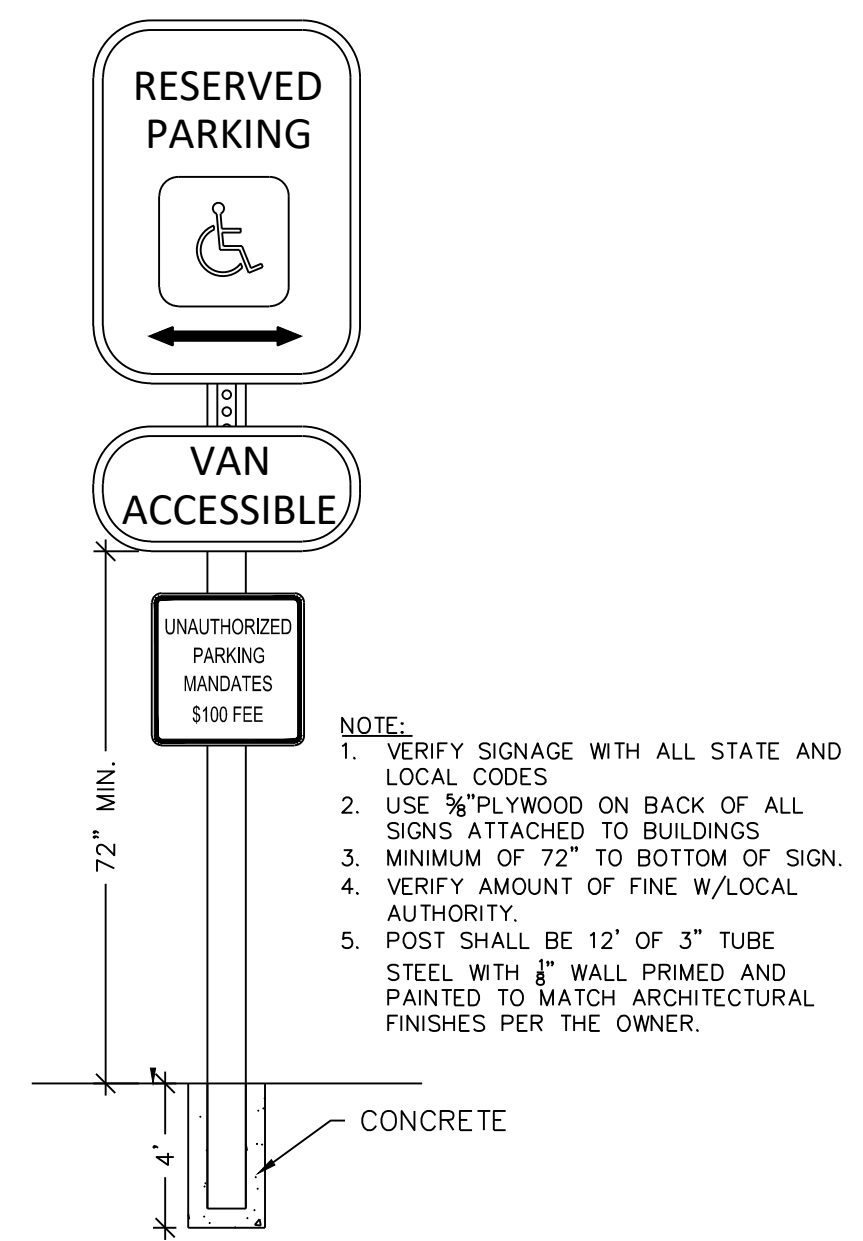
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PROJECT NO. F:\PUBLICWORKS\PROJECTS\CROSSWALK_STREET_051014.DWG	DATE 05/03/20	DATE 05/11/2021	DATE 05/11/2021	DATE 01.03.11



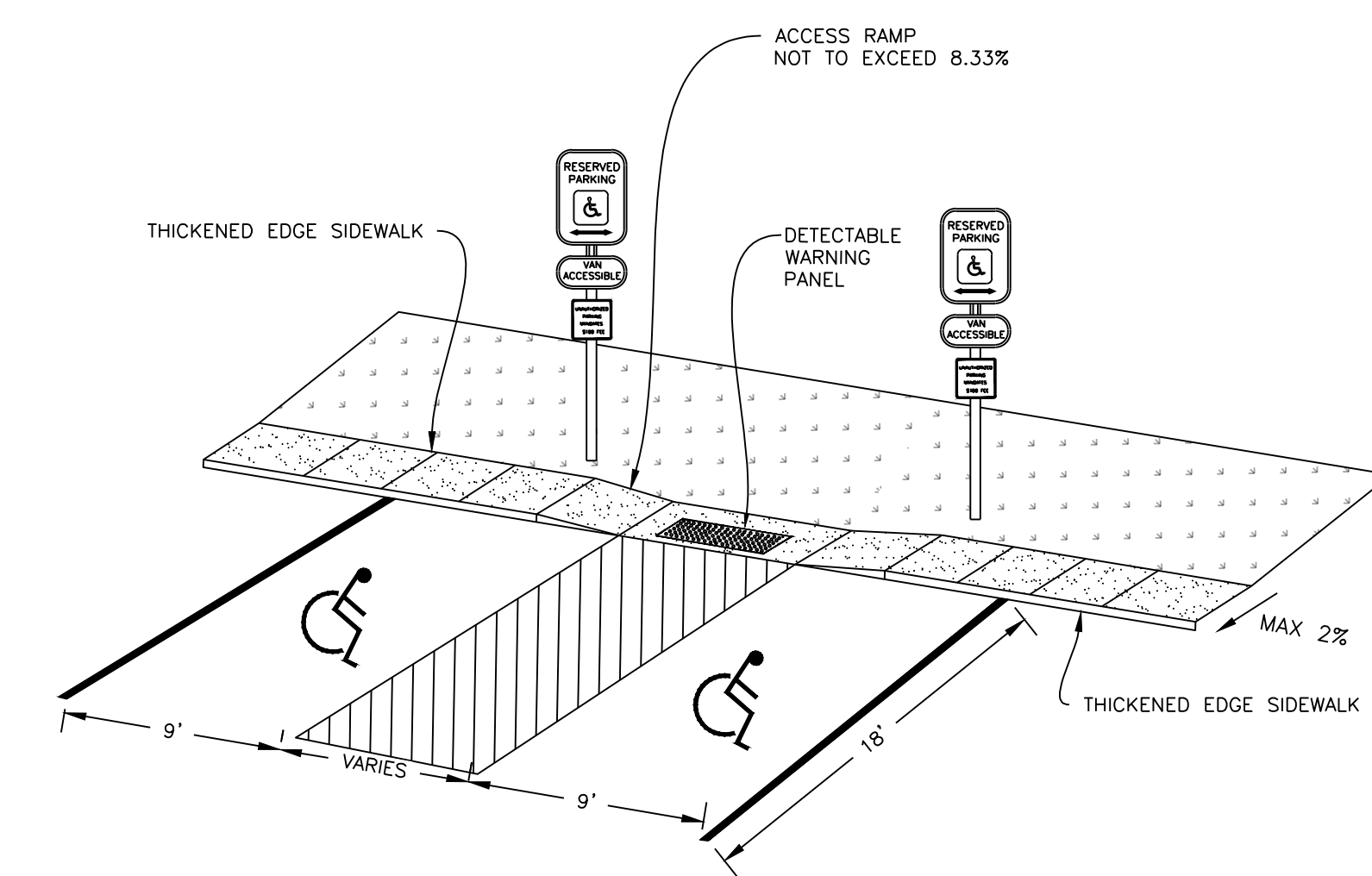
CITY OF PUYALLUP
DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

PAVEMENT MARKING DETAILS

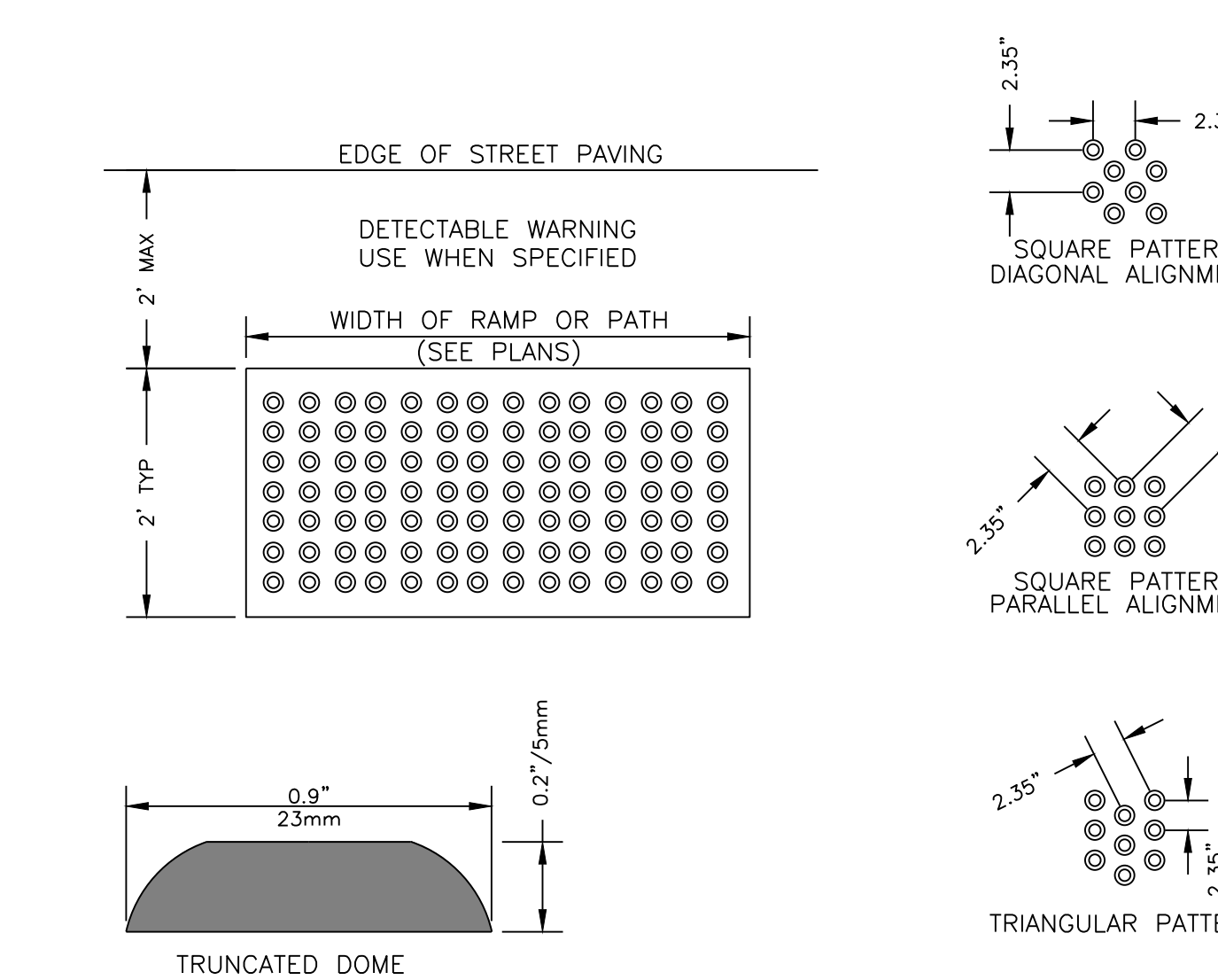
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PROJECT NO. F:\PUBLICWORKS\PROJECTS\CROSSWALK_STREET_051014.DWG	DATE 05/03/20	DATE 05/11/2021	DATE 05/11/2021	DATE 01.03.10



1 STANDARD ADA PARKING SIGN DETAIL
N.T.S.

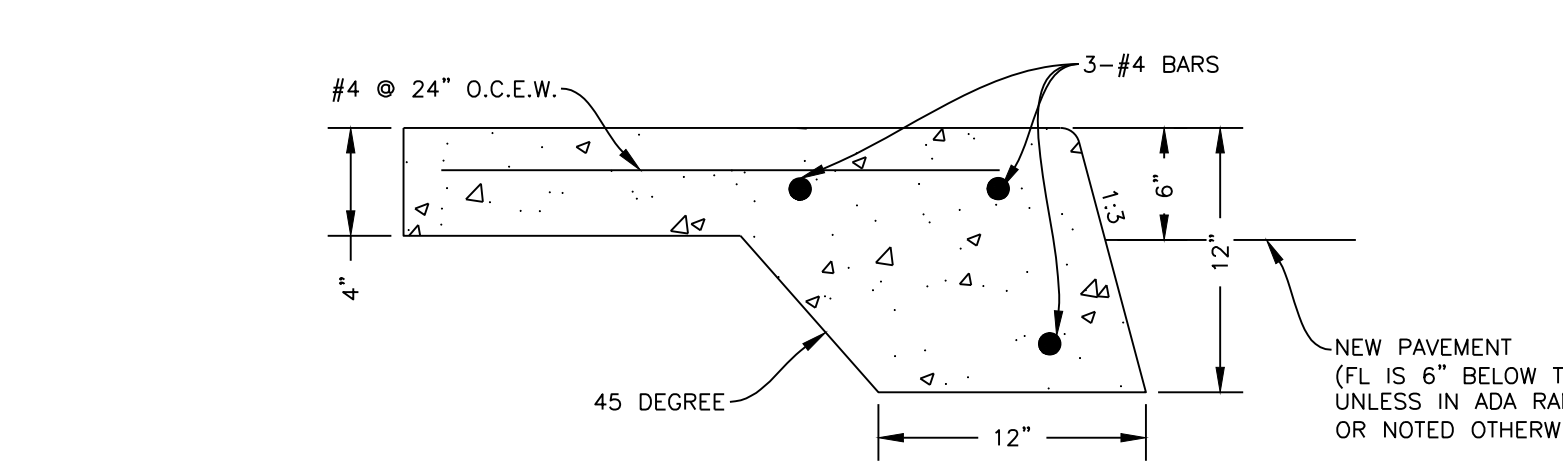


2 ADA RAMP
N.T.S.



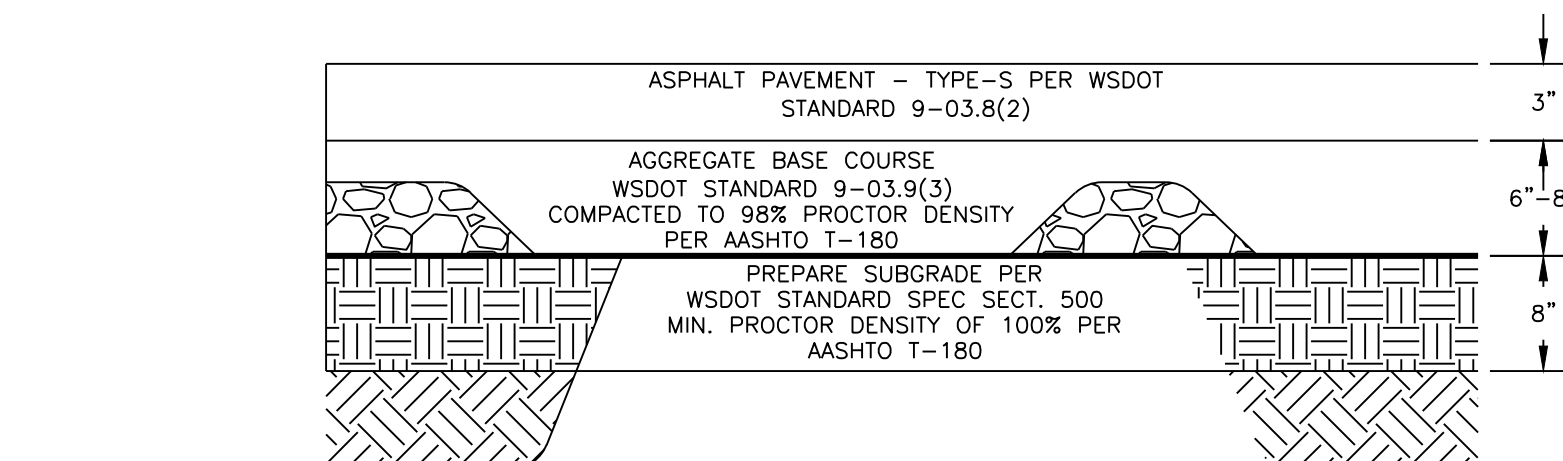
- NOTES:
1. TRUNCATED DOME PANELS SHALL BE RED FIBERGLASS AND CAST IN PLACE OR EQUAL APPROVED IN WRITING BY THE PERMITTING AUTHORITY.
 2. THE DETECTABLE WARNING SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON DARK, OR DARK-ON-LIGHT AND MEET THE CONFIGURATION AND DIMENSION SHOWN (PER ADAAG 4.29.2).

3 TRUNCATED DOME PANELS
N.T.S.



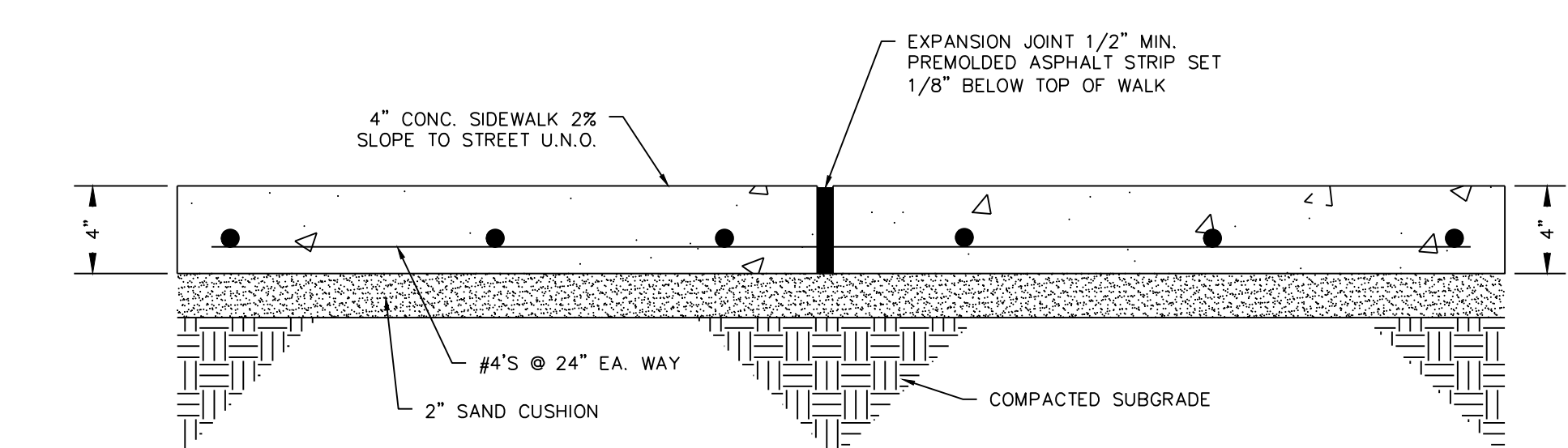
- NOTES:
1. PROVIDE 1/2" EXPANSION MATERIAL AT EXISTING CONCRETE JOINTS, BUILDINGS & ADJACENT TO CURB AND GUTTER.
 2. PROVIDE FULL DEPTH EXPANSION JOINT WITH 1/2" EXPANSION MATERIAL AT 60" INTERVALS.
 3. SAWCUT 1" DEEP AT 6" INTERVALS OR LESS TO APPROXIMATE SQUARE DESIGN.
 4. PROVIDE 2-1/2" SMOOTH DOWELS @ 24" O.C. AT EXPANSION JOINTS.
 5. CONCRETE SHALL BE 4,000 (OR HIGHER) PSI.

4 THICKENED EDGE CONCRETE
N.T.S.



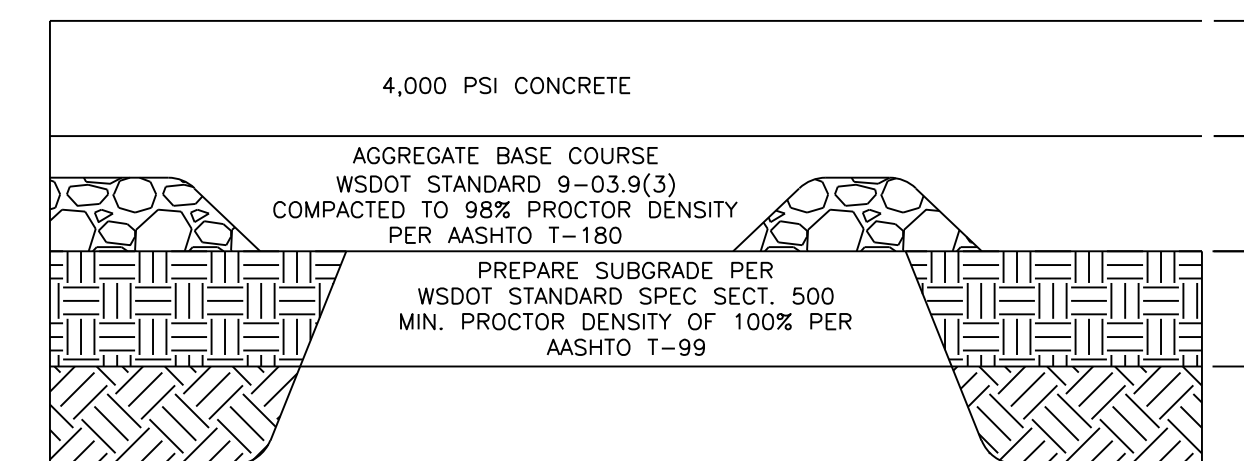
- NOTES:
1. ALL PAVING MATERIALS AND CONSTRUCTION SHALL MEET WSDOT STANDARDS.
 2. SITE ENTRY SHALL HAVE AN 8" AGGREGATE BASE COURSE, ALL REMAINING DRIVES AND PARKING SHALL HAVE A 6" AGGREGATE BASE COURSE.

6 3" ASPHALT PAVEMENT
N.T.S.



- NOTES:
1. SAW CUT 1" DEEP EXPANSION JOINTS WITH #3 DOWELS 12" O.C. AT 6" INTERVALS OR LESS AND PROVIDE 3" EXPANSION MATERIAL AT ALL CONCRETE WALK INTERSECTIONS, DOOR OPENINGS, BUILDING WALLS, EXISTING CONCRETE JOINTS, & ADJACENT TO CURB AND GUTTER.
 2. MAXIMUM GROSS SLOPE 2% FROM BUILDINGS, MAXIMUM LONGITUDINAL SLOPE 5%.
 3. CONCRETE SHALL BE 4,000 (OR HIGHER) PSI AND PER CITY OF CONCORD SPECIFICATIONS.

5 4" CONCRETE SIDEWALK DETAIL
N.T.S.



- NOTES:
1. CONCRETE SHALL BE 4,000 (OR HIGHER) PSI AND PER WSDOT SPECIFICATIONS
 2. INSTALL #4 REBAR STEEL REINFORCEMENT AT 24" ON CENTER EACH WAY THROUGHOUT CONCRETE PAVEMENT
 3. REBAR SHALL BE INSTALLED AT MID DEPTH OF CONCRETE AND BE SUPPORTED BY "REBAR CHAIRS"
 4. CONCRETE SHALL BE SAW CUT TO A DEPTH OF 1.5" IN A +/- 10' GRID PATTERN
 5. CONCRETE SHALL BE TIED TO ALL CURBS AND GUTTER WITH 18"-#4 SMOOTH DOWEL AT 24" O.C. ONE END SHALL BE GREASED OR SLIP CAP PROVIDED.
 6. ANY ORGANIC SOILS "BLACK DIRT" ENCOUNTERED SHALL BE REMOVED FROM BELOW PAVEMENT SECTION UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER.

7 6" CONCRETE PAVEMENT
N.T.S.

CITY COMMENTS - 07-13-21
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APPROVED

BY: *[Signature]*
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021

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FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

REVISIONS

07-15-21	- CITY COMMENTS
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HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

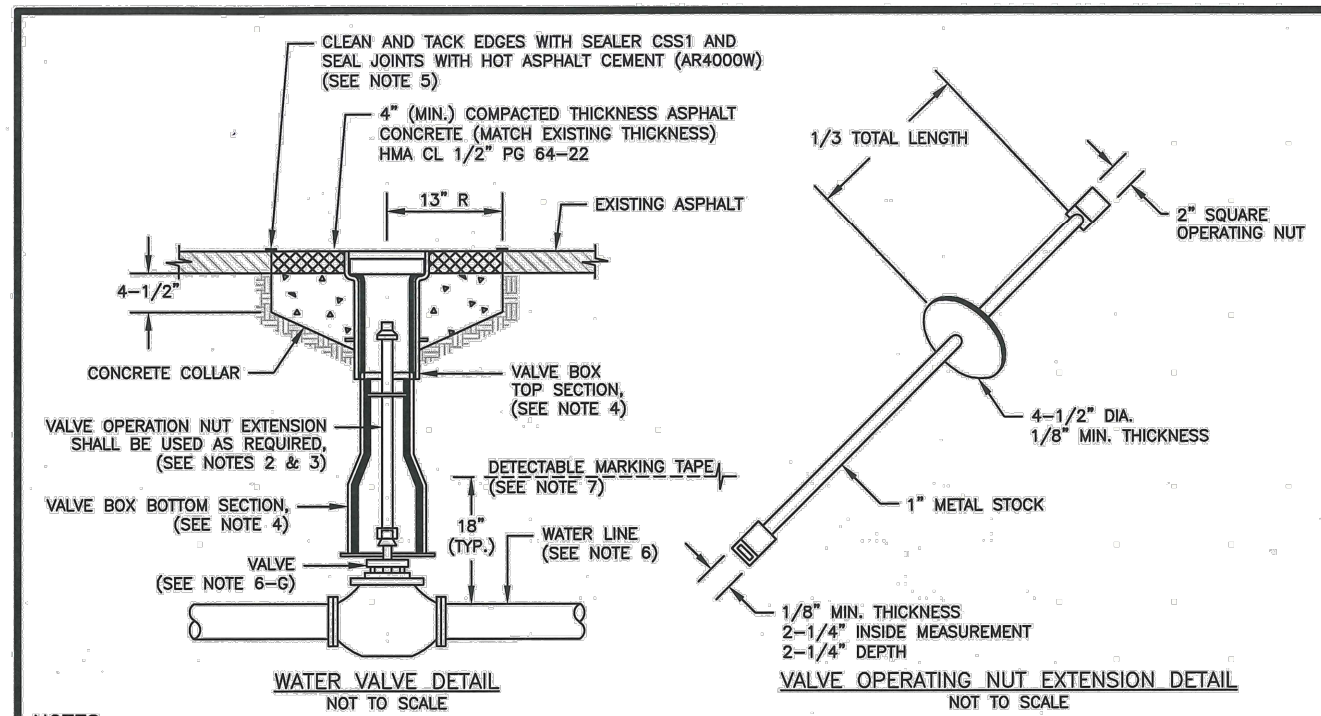
JONATHAN M. LOWRY
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
56042
11/05/21

LE JOB #	18009.1
PROJECT DATE:	11/01/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	15 OF 23

GENERAL DETAILS

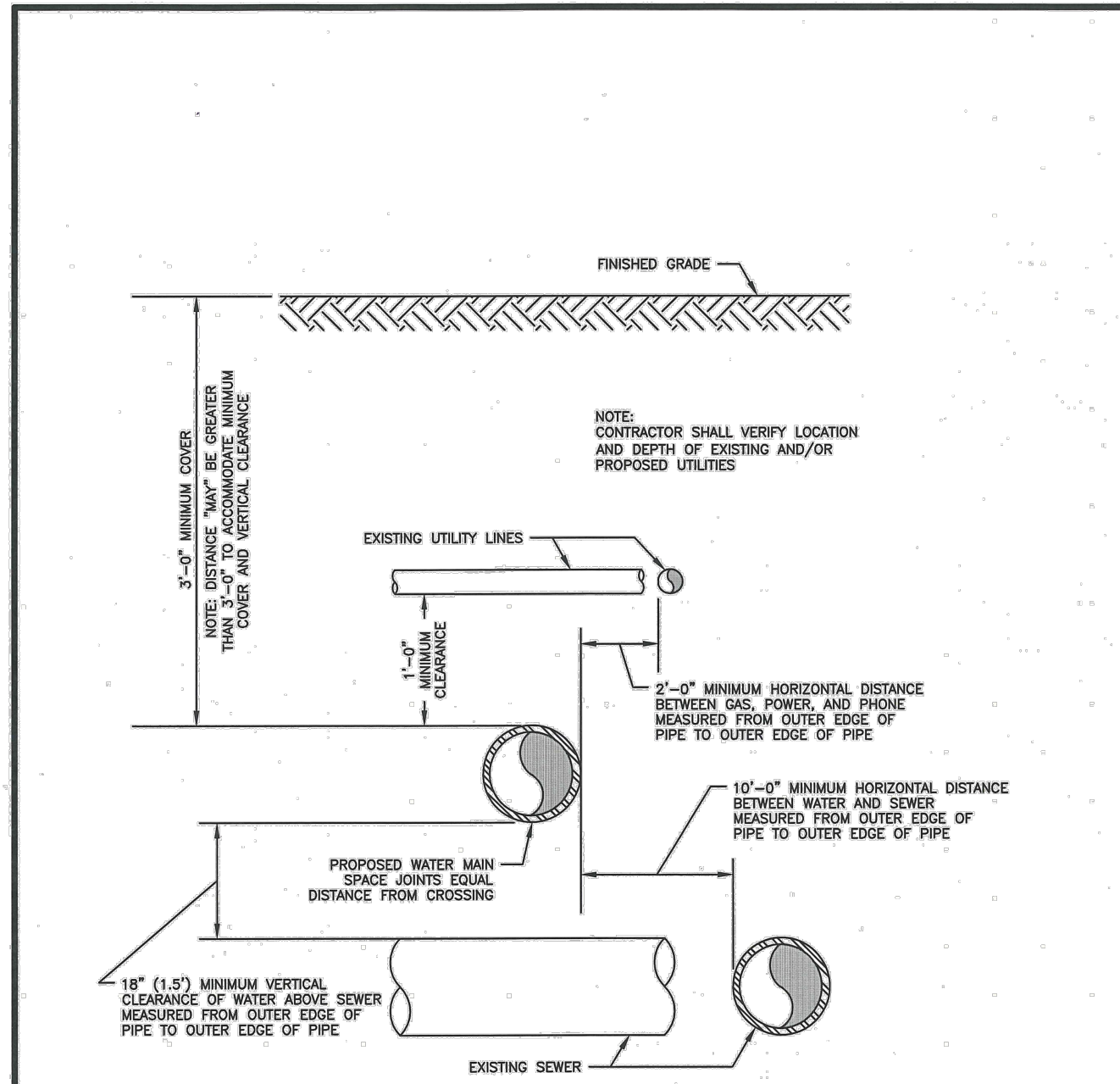
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- NOTES:**
- WATER MAINS SHALL HAVE A MINIMUM COVER OF 36" FROM FINISHED GRADE IN IMPROVED RIGHT-OF-WAY AND IMPROVED EASEMENTS, AND A MINIMUM OF 48" IN UNIMPROVED RIGHT-OF-WAY AND UNIMPROVED EASEMENTS.
 - VALVE OPERATING NUT EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN FIVE (5) FEET BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF TWO (2) FEET LONG, ONLY ONE EXTENSION TO BE USED PER VALVE. TOP OF EXTENSION SHALL BE 2 FEET 6 INCHES TO 3 FEET BELOW FINISHED GRADE.
 - ALL VALVE OPERATING NUT EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND PAINTED WITH TWO COATS OF METAL PAINT.
 - VALVE BOXES SHALL BE TWO-PIECE, ADJUSTABLE, CAST IRON WITH EXTENSION PIECES (IF NECESSARY), AS MANUFACTURED BY THE WARRIOR #940 SEATTLE OR APPROVED EQUAL. THE WORD "WATER" SHALL BE CAST IN RELIEF ON THE VALVE BOX COVER. VALVE BOX TOPS INSTALLED IN ARTERIAL ROADWAYS SHALL BE MANUFACTURED BY EAST JORDAN (EJ) IRONWORKS MODEL 8555 WITH VALVE BOX COVER MODEL 8500 OR APPROVED EQUAL.
 - WATER LINE CUTS SHALL BE SEALED WITH A HOT PAVING GRADE ASPHALT AND FACE OF CUT SHOULD:
 - WATER MAINS SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH SECTION 7 OF THE WSDOT STANDARD SPECIFICATIONS SUPPLEMENTED WITH THE FOLLOWING:
 - DUCTILE IRON PIPE SHALL CONFORM TO AWWA C 151, THICKNESS CLASS 52, AND THE EXTERIOR SHALL BE COATED WITH COAL TAR VARNISH. PIPE AND FITTINGS SHALL BE WATER LINED AND SHALL CONFORM TO AWWA C 104. THE THICKNESS OF THE LINING SHALL BE NOT LESS THAN 1/16" THICK FOR 3" TO 12" PIPE, 3/32" THICK FOR 14" TO 24" PIPE, AND 1/8" THICK FOR 30" TO 54" PIPE. THE JOINT LINING SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 150.
 - JOINTS SHALL BE TYTON PUSH-ON JOINTS OR APPROVED EQUAL, OR MECHANICAL JOINT TYPE PER AWWA C 111 EXCEPT WHERE FLANGED JOINTS ARE REQUIRED TO CONNECT TO VALVES OR OTHER EQUIPMENT.
 - BOLTS AND NUTS FOR BURIED FLANGES LOCATED OUTDOORS, ABOVE GROUND, OR IN OPEN VAULTS IN STRUCTURES SHALL BE TYPE 316 STAINLESS STEEL CONFORMING TO ASTM A 193, GRADE B8M FOR BOLTS, AND ASTM A 194, GRADE 8M FOR NUTS. BOLTS AND NUTS LARGER THAN ONE AND ONE-QUARTER (1-1/4) INCHES SHALL BE TYPE 307, GRADE 8, WITH GALVANIZING, ASTM A 153, TYPE ICS.
 - BOLTS USED IN FLANGE INSTALLATION SETS SHALL CONFORM TO ASTM B 183, GRADE B7. NUTS SHALL COMPLY WITH ASTM A 194, GRADE 2H.
 - PROVIDE A WASHER FOR EACH NUT, WHERE NEEDED, WASHERS SHALL BE OF THE SAME MATERIAL AS THE NUTS.
 - ALL FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF AWWA C 110 AND AWWA C 111.
 - RESILIENT SEATED WEDGE GATE VALVES SHALL BE USED FOR TEN (10) INCH MAINS AND SMALLER. BUTTERFLY VALVES SHALL BE USED FOR MAINS GREATER THAN TEN (10) INCHES.
 - RESILIENT SEATED WEDGE GATE VALVE GATE VALVES SHALL CONFORM TO THE LATEST AWWA SPECIFICATIONS FOR COLD WATER, DOUBLE-DISK GATE VALVES, 200 PSI WORKING PRESSURE. THEY SHALL BE IRON-BODIED, BRONZE MOUNTED, NON-RISING STEM, WITH TWO (2) INCH SQUARE NUT, COUNTER-CLOCKWISE OPENING, MECHANICAL JOINT AND / OR FLANGED ENDS (6" VALVE ON FIRE HYDRANT LINES WHICH SHALL BE MECHANICAL JOINTS IF FLANGED). VALVE STEMS SHALL BE PROVIDED WITH O-RING SEALS AND SHALL BE AS MANUFACTURED BY THE MUELLER COMPANY OR APPROVED EQUAL.
 - BUTTERFLY VALVES, BUTTERFLY VALVES CONFORMING WITH AWWA C 504, CLASS 150 AND SHALL HAVE STANDARD AWWA TWO (2) INCH SQUARE NUT.
 - DETECTABLE MARKING TAPE SHALL BE INSTALLED 18" ABOVE PIPE, BE BLUE IN COLOR, AND READ "CAUTION WATER LINE BELOW" MEETING WSDOT SPEC. 8-15.1R.

CITY OF PUYALLUP
OFFICE OF THE CITY ENGINEER
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WATER VALVES AND MAINS
CITY STANDARD 03.01.01

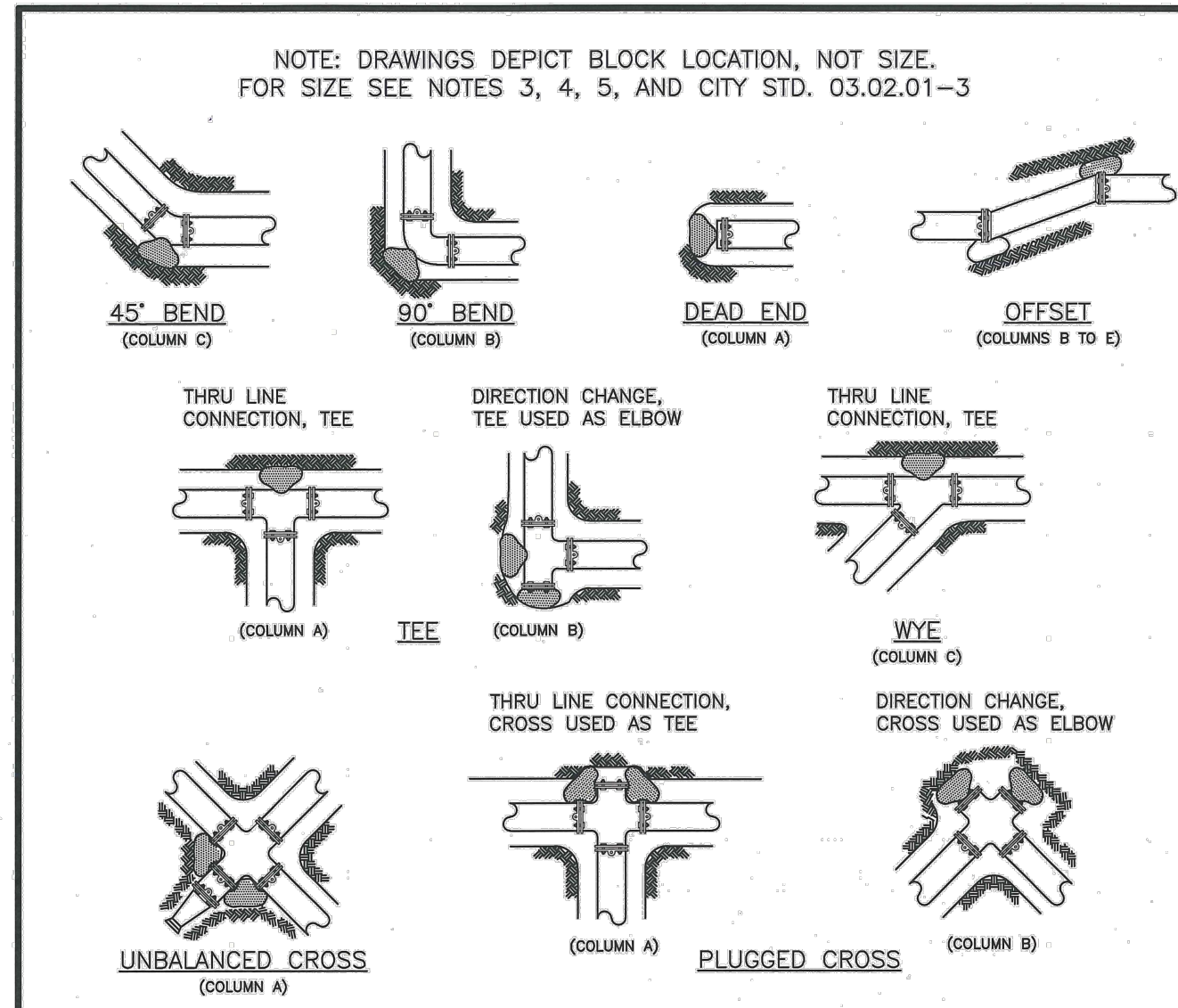


SEE CITY STANDARD 03.01.03-2 FOR ADDITIONAL NOTES FOR THIS DETAIL.

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OFFICE OF THE CITY ENGINEER
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DATE: 2/15/2018
NOT TO SCALE
WATER MAIN CROSSING OTHER UTILITIES
CITY STANDARD 03.01.03-1

- NOTES FOR WATER MAIN CROSSING OTHER UTILITIES**
CITY STANDARD 03.01.03-1
- WHEN LOCAL CONDITIONS PREVENT THE SEPARATIONS DESCRIBED ON CITY STANDARD 03.01.03-1, A SEWER MAY BE LAID CLOSER THAN 10-FOOT HORIZONTALLY OR 18-INCHES VERTICALLY TO A WATER LINE, PROVIDED THE GUIDELINES BELOW ARE FOLLOWED:
- UNUSUAL CONDITIONS (PARALLEL SYSTEMS)**
- SEWER LINE IS LAID IN A SEPARATE TRENCH FROM THE WATER LINE.
 - WHEN 18-INCHES VERTICAL SEPARATION CANNOT BE OBTAINED, THE SEWER SHALL BE CONSTRUCTED OF MATERIALS AND JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION AND SHALL BE PRESSURE TESTED TO ENSURE WATER TIGHTNESS PRIOR TO BACKFILLING.
 - THE WATER LINE SHALL BE PLACED ON A BENCH OF UNDISTURBED EARTH WITH THE BOTTOM OF THE WATER PIPE AT LEAST 18-INCHES ABOVE THE CROWN OF THE SEWER, AND SHALL HAVE AT LEAST 4- FEET OF HORIZONTAL SEPARATION AT ALL TIMES. THE CITY RESERVES THE RIGHT TO REQUIRE SUPPLEMENTAL MITIGATION EFFORTS, SUCH AS IMPERMEABLE BARRIERS OR OTHER MEANS, FOR ADDITIONAL PROTECTION.
 - THE SEWER SHALL NOT BE INSTALLED IN THE SAME DITCH AS A POTABLE WATER LINE WITHOUT PRIOR WRITTEN APPROVAL BY THE CITY OF PUYALLUP.
- UNUSUAL CONDITIONS (PERPENDICULAR SYSTEMS)**
- CONDITION A - GRAVITY SEWERS PASSING UNDER WATER LINES (ALL OF THE FOLLOWING APPLY)**
- ONE FULL SECTUM (NOT LESS THAN 18- FEET LONG) OF DUCTILE IRON CLASS 52 WATER PIPE, AND THE LONGEST STANDARD SEWER PIPE LENGTH AVAILABLE FROM THE MANUFACTURER SHALL BE USED WITH THE PIPES CENTERED TO MAXIMIZE JOINT SEPARATION.
 - STANDARD GRAVITY-SEWER MATERIAL ENCASED IN CONCRETE OR IN A ONE-QUARTER-INCH THICK CONTINUOUS STEEL, DUCTILE IRON, OR PRESSURE RATED PVC PIPE WITH A DIMENSION RATIO (THE RATIO OF THE OUTSIDE DIAMETER TO THE PIPE WALL THICKNESS) OF 18 OR LESS, WITH ALL JOINTS PRESSURE-GROUTED WITH SAND-CEMENT GROUT OR BENTONITE.
- EXAMPLE OF DIMENSION RATIO (DR): OUTSIDE PIPE DIAMETER DIVIDED BY THE WALL THICKNESS OR CO./I. FOR 8-INCH SDI, 80 PVC PIPE (I=0.5 INCHES), THE DR IS 8.0/0.5=16.0.
- CONDITION B - GRAVITY SEWER PASSING OVER WATER LINES**
- WATER LINES SHALL BE PROTECTED BY PROVIDING:
- A VERTICAL SEPARATION OF AT LEAST 18-INCHES BETWEEN THE INVERT OF THE SEWER AND THE CROWN OF THE WATER LINE.
 - ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER LINE TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING ON AND BREAKING OF THE WATER LINE.
 - THE SEWER PIPE SHALL BE THE LONGEST STANDARD SEWER PIPE LENGTH AVAILABLE FROM THE MANUFACTURER WITH THE WATER AND SEWER PIPES CENTERED TO MAXIMIZE JOINT SEPARATION.
 - THE SEWER LINE CASING EQUIVALENT TO THAT SPECIFIED IN A(2) ABOVE.

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WATER MAIN CROSSING OTHER UTILITIES (NOTES)
CITY STANDARD 03.01.03-2



- NOTES:**
- THE FOLLOWING PRECAUTIONS MUST BE OBSERVED WHEN CONSTRUCTING THRUST BLOCKS:
 - BLOCKS MUST BE POURED OR PLACED AGAINST UNDISTURBED SOIL.
 - THE PIPE FITTING(S) AND BOLTS MUST BE ACCESSIBLE. WRAP IN PLASTIC BEFORE POURING CONCRETE BLOCKING.
 - CONCRETE SHOULD BE CURED FOR AT LEAST 5 DAYS AND SHOULD HAVE A MINIMUM COMPRESSION STRENGTH OF 3,000 PSI AT 28 DAYS.
 - RESTRAINED JOINTS SHALL BE INSTALLED, IN ADDITION TO CONCRETE THRUST BLOCKING.
 - BLOCKS MUST BE POSITIONED TO COUNTERACT THE DIRECTION OF THE RESULTANT THRUST FORCE.
 - ALL PIPE SHALL BE PROPERLY BEDDED, SEE CITY OF PUYALLUP STANDARD BEDDING DETAIL NO. 06.01.01.
 - CONTRACTOR TO PROVIDE BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE.
 - DAVIDE THRUST BY SAFE BEARING LOAD TO DETERMINE REQUIRED AREA (IN SQUARE FEET) OF CONCRETE TO DISTRIBUTE LOAD.
 - BEARING SURFACE AREAS TO BE ADJUSTED BY THE ENGINEER FOR OTHER PRESSURE AND/OR SOIL CONDITIONS.

CITY OF PUYALLUP
OFFICE OF THE CITY ENGINEER
APPROVED FOR PUBLICATION
DATE: 2/15/2018
NOT TO SCALE
HORIZONTAL THRUST BLOCKING
CITY STANDARD 03.02.01-1

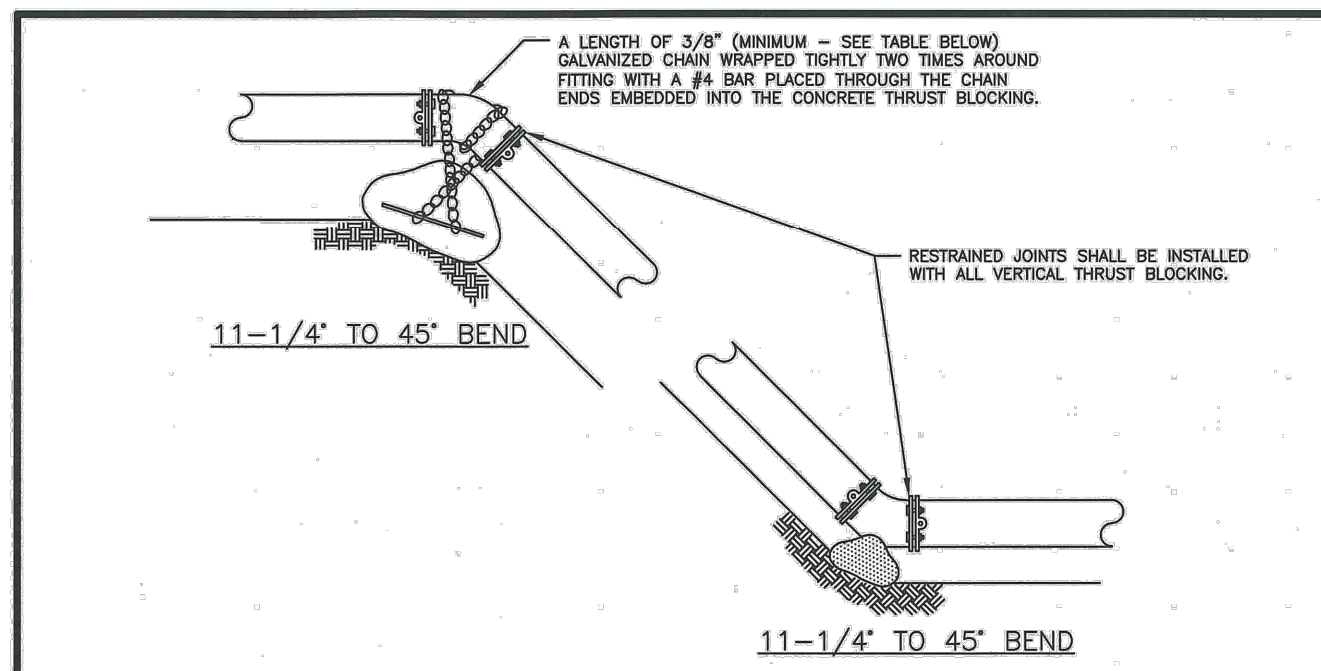


TABLE 1: CONCRETE BLOCKING FOR VERTICAL BENDS

PIPE DIAMETER (INCHES)	TEST PRESSURE (PSI)	BEND ANGLE (DEG)	CONCRETE VOLUME (CY)	CURE SIZE (FEET)	CHAIN SIZE (INCHES)	CHAIN EMBEDMENT (INCHES)
4"	200	11.25°	6	1.8	3/8"	17"
		22.5°	12	2.3		
		45°	22	2.8		
6"	200	11.25°	14	2.4	3/8"	17"
		22.5°	27	3.0		
		45°	50	3.7		
8"	200	11.25°	25	2.9	3/8"	17"
		22.5°	48	3.6		
		45°	89	4.5		
10"	200	11.25°	38	3.4	3/8"	17"
		22.5°	75	4.2		
		45°	139	5.2		
12"	200	11.25°	55	3.8	3/8"	17"
		22.5°	108	4.8		
		45°	200	5.8		
14"	200	11.25°	75	4.2	3/8"	17"
		22.5°	147	5.3		
		45°	272	6.5		
16"	200	11.25°	98	4.8	3/8"	17"
		22.5°	192	5.8		
		45°	355	7.1		

CITY OF PUYALLUP
OFFICE OF THE CITY ENGINEER
APPROVED FOR PUBLICATION
DATE: 2/15/2018
NOT TO SCALE
VERTICAL THRUST BLOCKING
CITY STANDARD 03.02.01-2

TABLE 2: THRUST AT FITTINGS AT 200 PSI

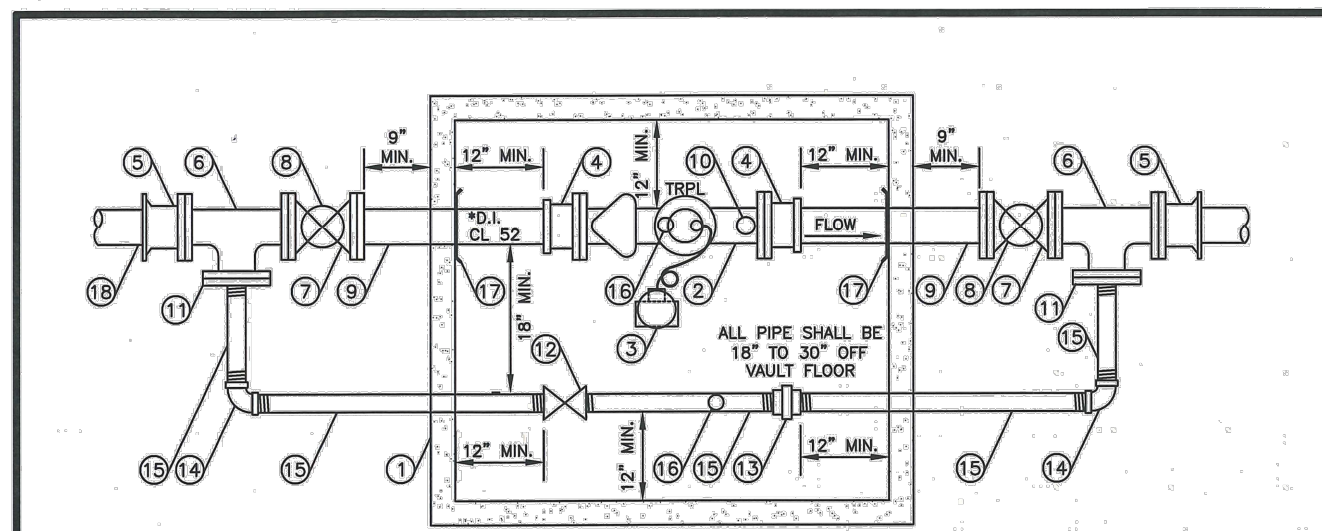
SIZE	TEST PRESSURE (PSI)	THRUST FITTINGS AT 200 PSI				
		A TEE AND DEAD ENDS	B 90° BEND	C 45° BEND	D 22.5° BEND	E 11.25° BEND
4"	200	3,140	4,440	2,405	1,225	615
6"	200	7,070	9,985	5,410	2,760	1,385
8"	200	12,585	17,770	9,820	4,905	2,465
10"	200	19,635	27,770	15,030	7,660	3,850
12"	200	28,275	39,985	21,640	11,030	5,545
14"	200	38,485	54,425	29,455	15,015	7,545
16"	200	50,285	71,085	38,470	19,615	9,855

TABLE 3: BEARING VALUE OF SOIL

SOIL TYPE	SAFE BEARING LOAD (LBS/SF)
MUCK, PEAT, ETC.	0
SOFT CLAY/ALLUVIAL SOIL	1,000
SAND	2,000
SAND AND GRAVEL	3,000
SAND AND GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

- SEE CITY STANDARDS 03.02.01-1 AND 03.02.01-2 FOR ADDITIONAL INFORMATION.
- NOTES:**
- TO DETERMINE THRUST AT PRESSURES OTHER THAN PSI SHOWN, MULTIPLY THE THRUST OBTAINED IN TABLE 2 BY THE RATIO OF THE PRESSURE TO 200 PSI.
EXAMPLE: THE THRUST ON A 12 INCH, 90° BEND AT 300 PSI.
 $39,985 \times \frac{300}{200} = 59,978$ LBS
 - TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (SF):
SEE TABLE 3, BEARING VALUE OF SOIL.
EXAMPLE: FOR SAND AND GRAVEL BEARING VALUE FROM TABLE 3 IS 3,000 LBS/SF.
 $59,978 \text{ LBS} \div 3,000 \text{ LBS/SF} = 20 \text{ SF OF AREA}$
 - CONTRACTOR TO PROVIDE BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE
 - AREAS SHALL BE ADJUSTED FOR OTHER PRESSURE CONDITIONS.
 - NO WATER MAIN SHALL DEAD END AGAINST A MAIN LINE VALVE. DEAD END WATER MAINS SHALL BE BLOCKED AGAINST A RESTRAINED MECHANICAL JOINT (M.J.) PLUG OR CAP.

CITY OF PUYALLUP
OFFICE OF THE CITY ENGINEER
APPROVED FOR PUBLICATION
DATE: 2/15/2018
NOT TO SCALE
THRUST BLOCKING TABLE
CITY STANDARD 03.02.01-3



- CONSTRUCTION NOTES**
- VAULT WITH STANDARD SLUMP PIT THAT DRAINS TO DAYLIGHT IF POSSIBLE. UTILITY VAULT OR APPROVED EQUAL, SIZED TO MAINTAIN CLEARANCES. SEE CITY STANDARD 03.11.01. CUT 2" HOLE IN LID FOR METER TRANSMITTER.
 - * SENSUS FLANGED C2 CHAIN METER WITH BUILT-IN STRAINER WITH TRPL, READING IN 1 CUBIC FEET. USE 3/4" DIAMETER 316 GRADE STAINLESS STEEL BOLTS AND TIE-ON NUTS ON METER FLANGE CONNECTIONS.
 - FLEX NET TRANSMITTER 520M SINGLE PORT COUPLE WITH LEAK DETECTION, MOUNTED ON METER VAULT LID.
 - FLANGED COUPLING ADAPTOR.
 - * FLANGE x MECHANICAL JOINT ADAPTOR.
 - * FLANGED TEE.
 - * RESILIENT SEATED WEDGE GATE VALVE (FLG-FLG) WITH 2" SQUARE OPERATING NUT.
 - * FLANGE x PLAN END SPOOL LENGTH AS REQUIRED.
 - REMOVE METER TEST PLUG AND INSTALL 2" x 4" BRASS NIPPLE, 2" BALL VALVE FORD B11-777W OR APPROVED EQUAL, 2-1/2" MALE (NST) x 2" MALE (PS) THREADED BRASS FHOSE ADAPTOR, 2-1/2" (NST) BRASS NOZZLE CAP.
 - * BLIND FLANGE WITH 2" THREADED OUTLET.
 - 2" LOCKING BALL VALVE FORD B11-777W OR APPROVED EQUAL.
 - 2" GALVANIZED UNION.
 - 2" GALVANIZED ELL.
 - 2" THREADED GALVANIZED PIPE - CUT TO LENGTH AS REQUIRED.
 - 2" ADJUSTABLE GALVANIZED PIPE SUPPORT.
 - MEGA LUG RING SECURED AGAINST VAULT WALL. MASTIC AND MORTAR SEAL WHERE PIPE PASSES THROUGH VAULT WALL.
 - AN ADDITIONAL GATE VALVE IS REQUIRED AT THE WATER MAIN BRANCH CONNECTION.
NOTE: * = 3", 4", OR 6" DEPENDING ON SERVICE LINE SIZE.
- GENERAL NOTES**
- ALL PIPE, VALVES, FITTINGS AND OTHER MATERIAL USED SHALL CONFORM TO AWWA STANDARDS (LATEST EDITION).
 - ALL CONSTRUCTION SHALL CONFORM TO WSDOT/AWWA STANDARDS SPECIFICATIONS, CURRENT EDITION, AND CITY OF PUYALLUP STANDARDS.

CITY OF PUYALLUP
OFFICE OF THE CITY ENGINEER
APPROVED FOR PUBLICATION
DATE: 2/15/2018
NOT TO SCALE
3"-4"-6" WATER SERVICE
CITY STANDARD 03.03.03

APPROVED
BY: *JML*
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021
NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.
THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

CITY COMMENTS - 07-13-21
ADDED CoP APPROVAL STAMP

REVISIONS

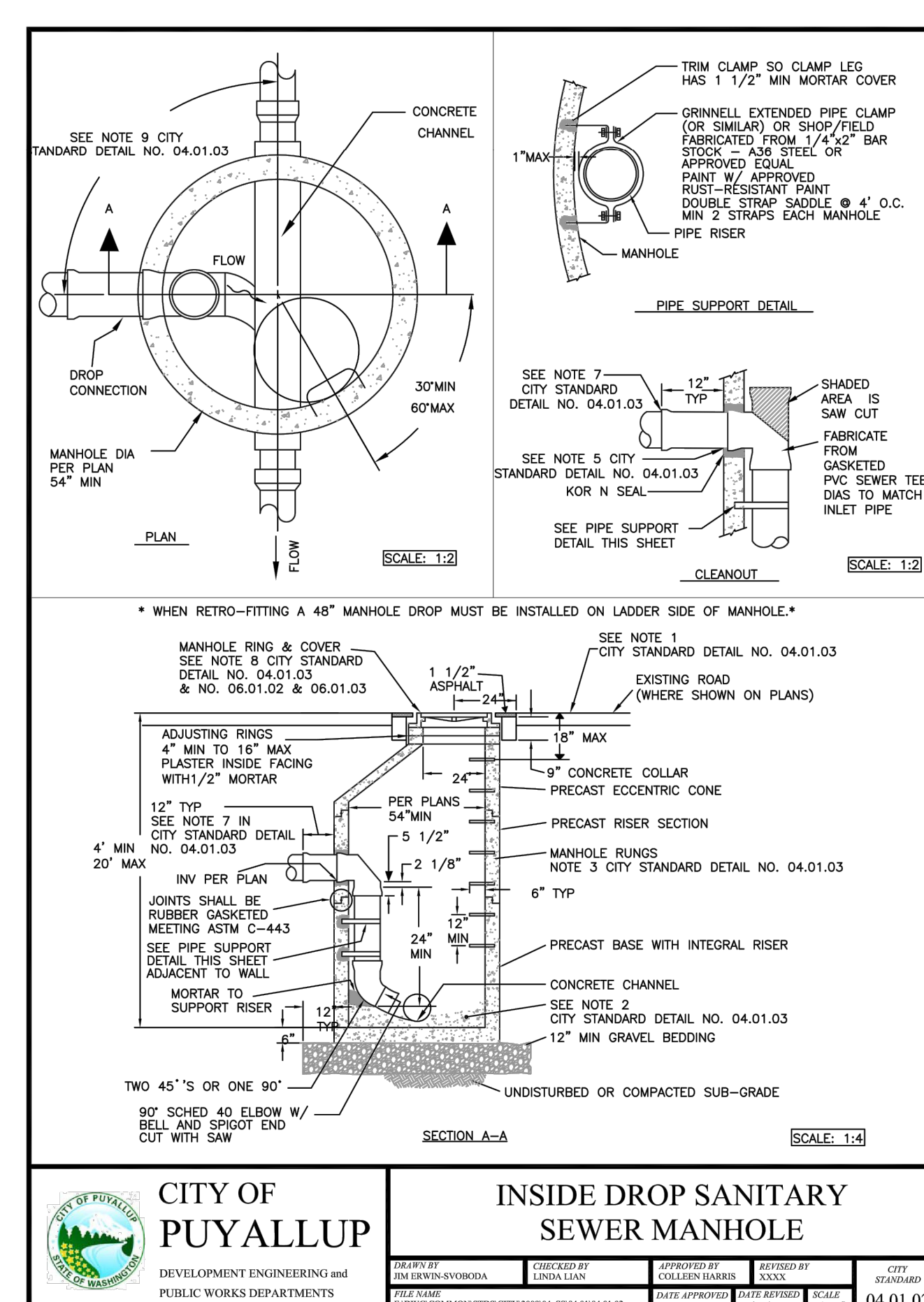
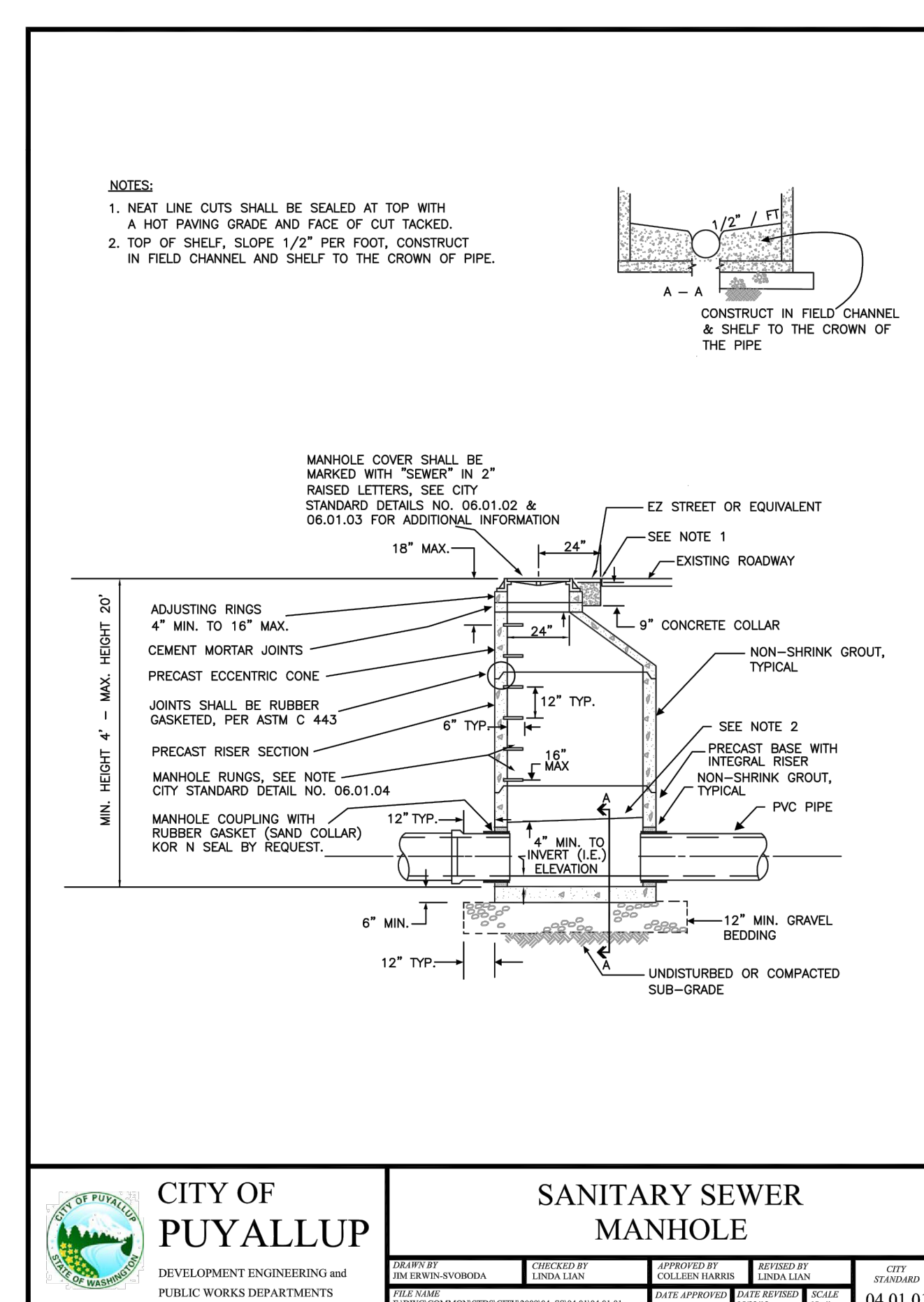
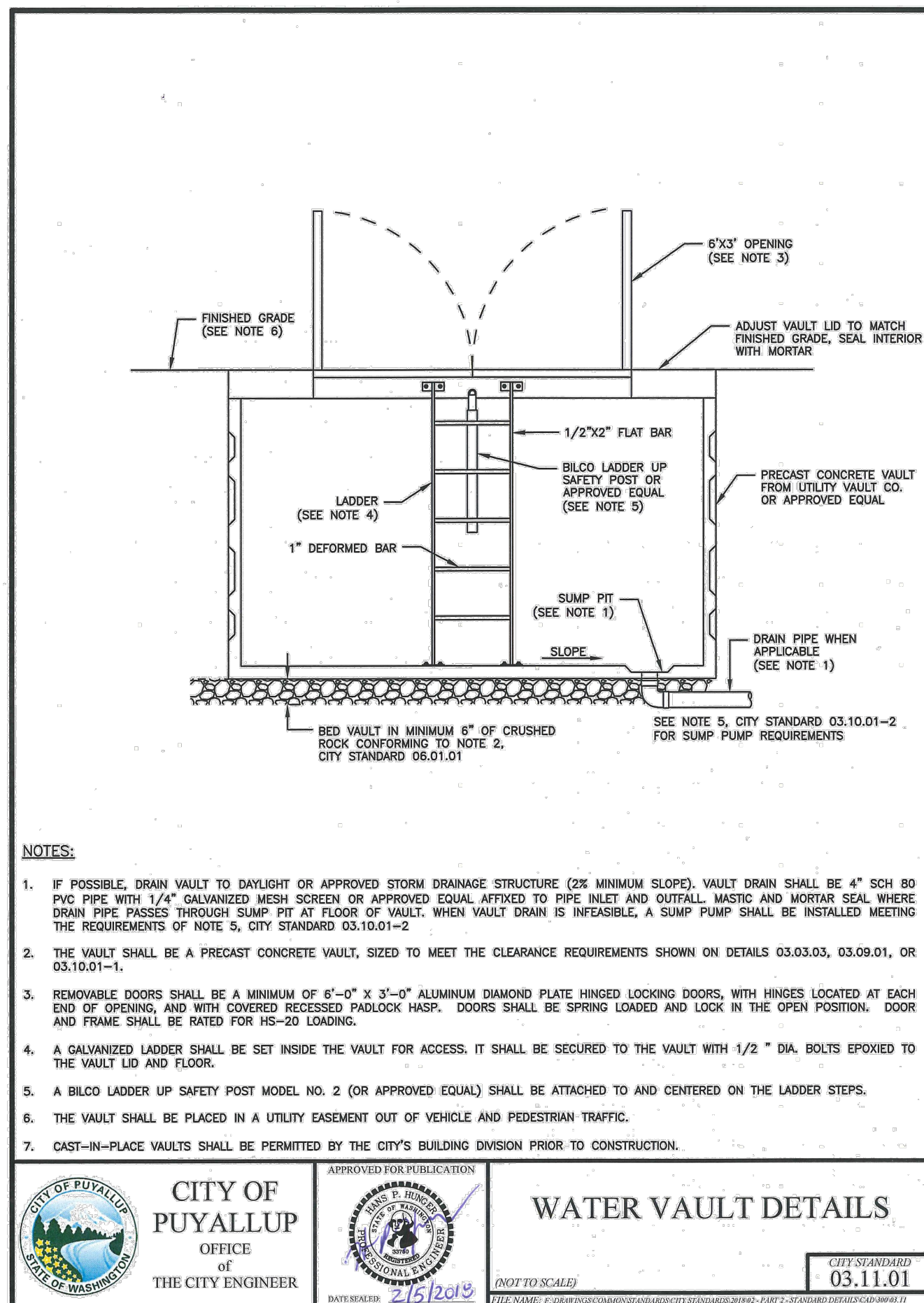
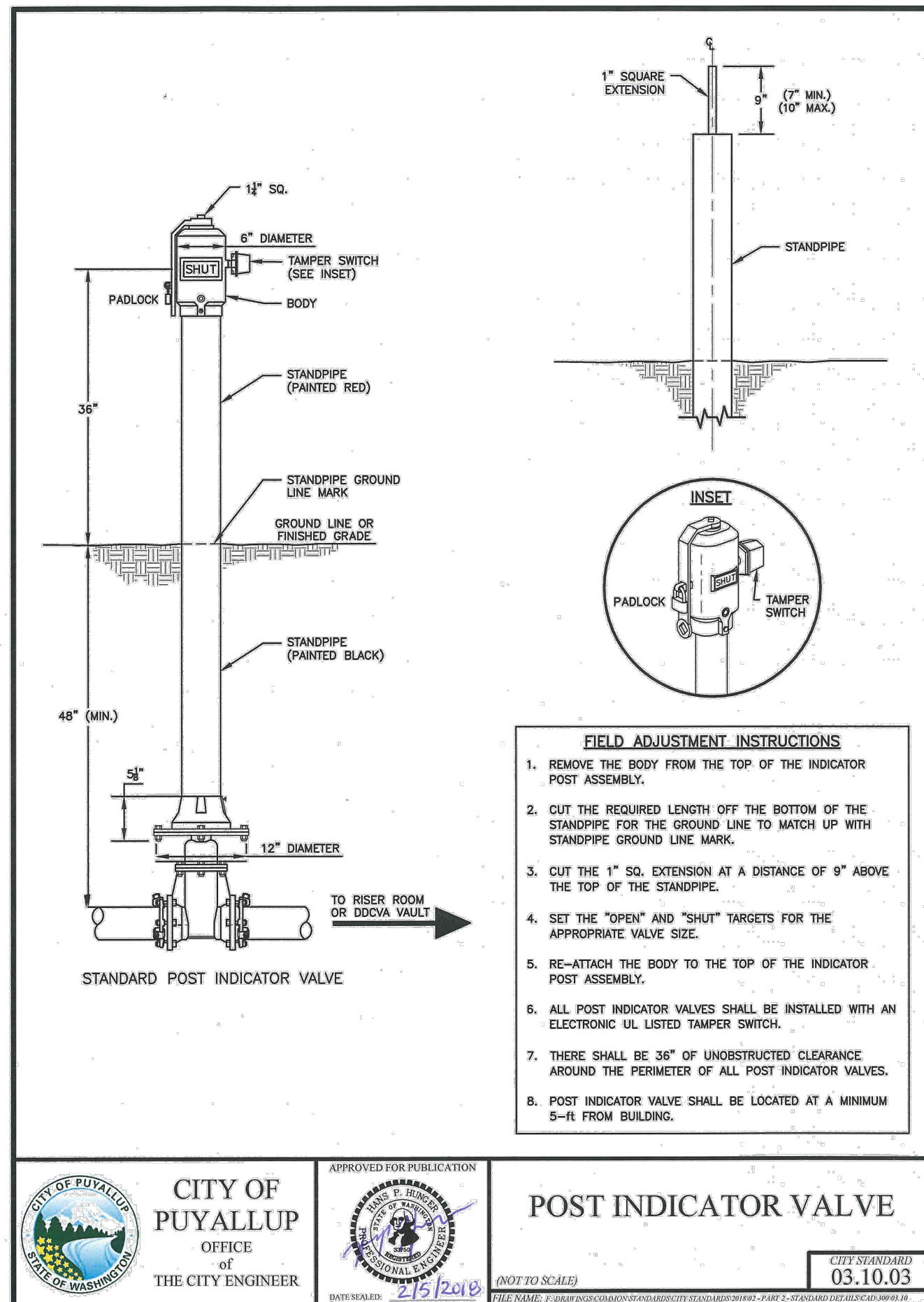
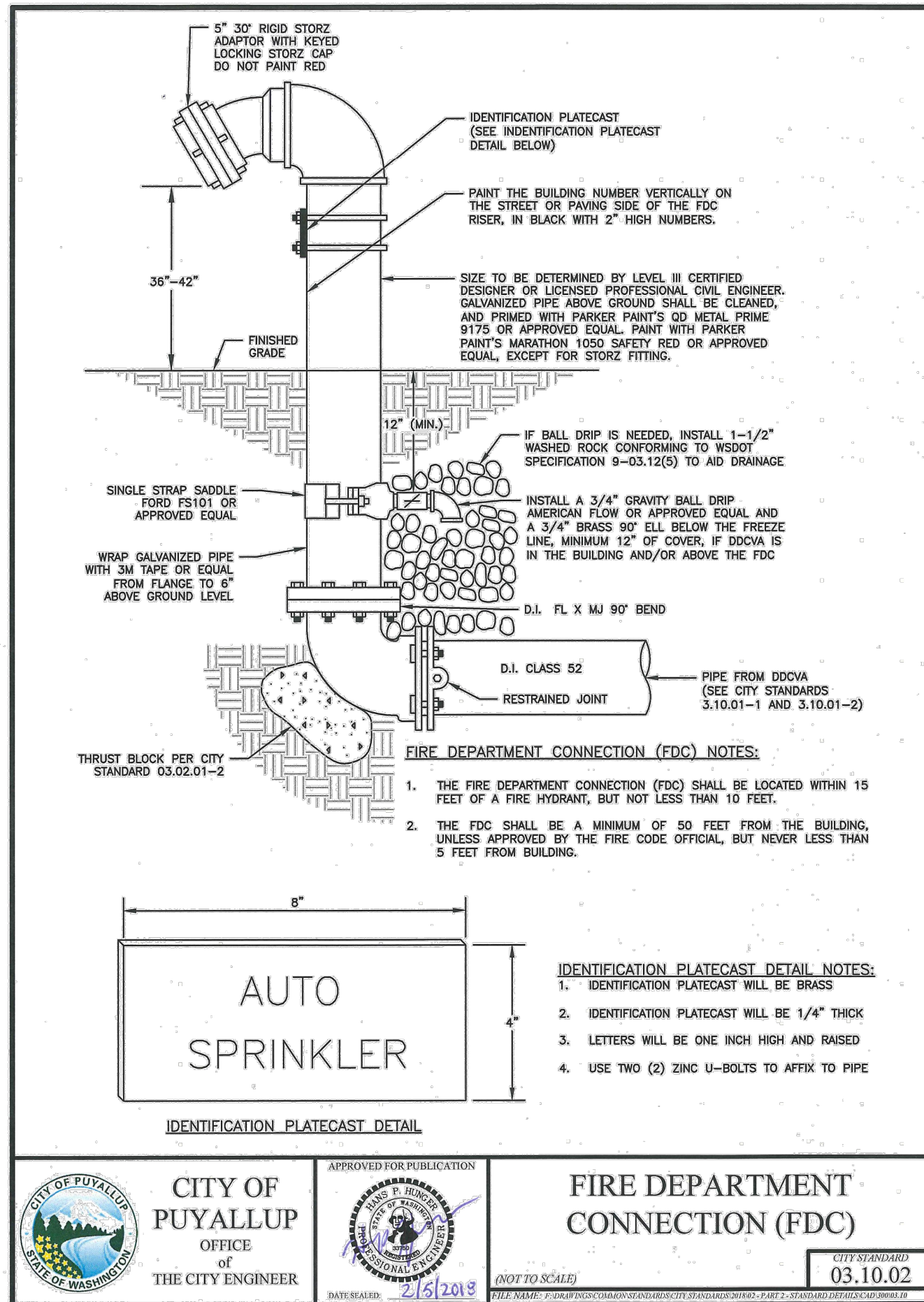
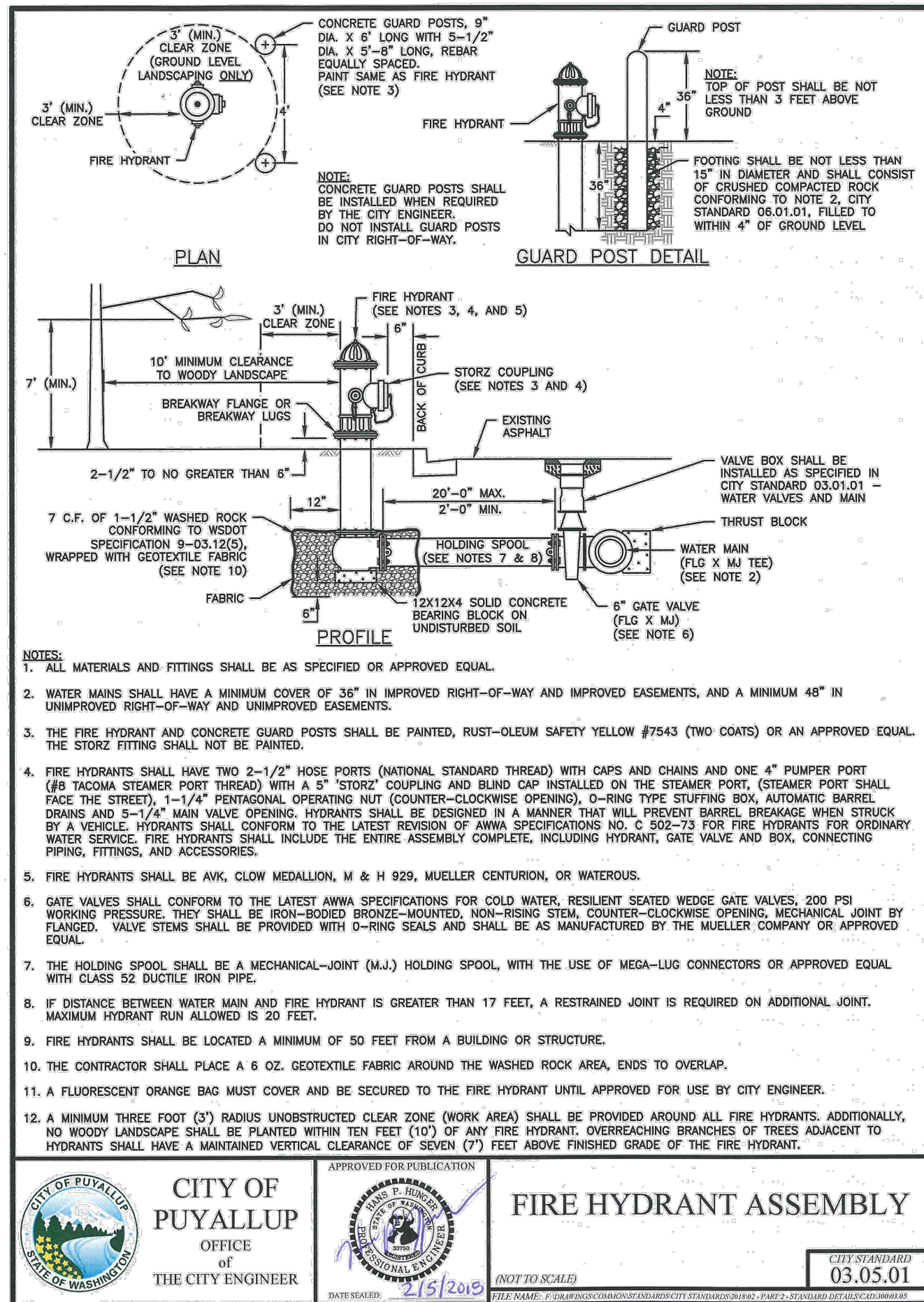
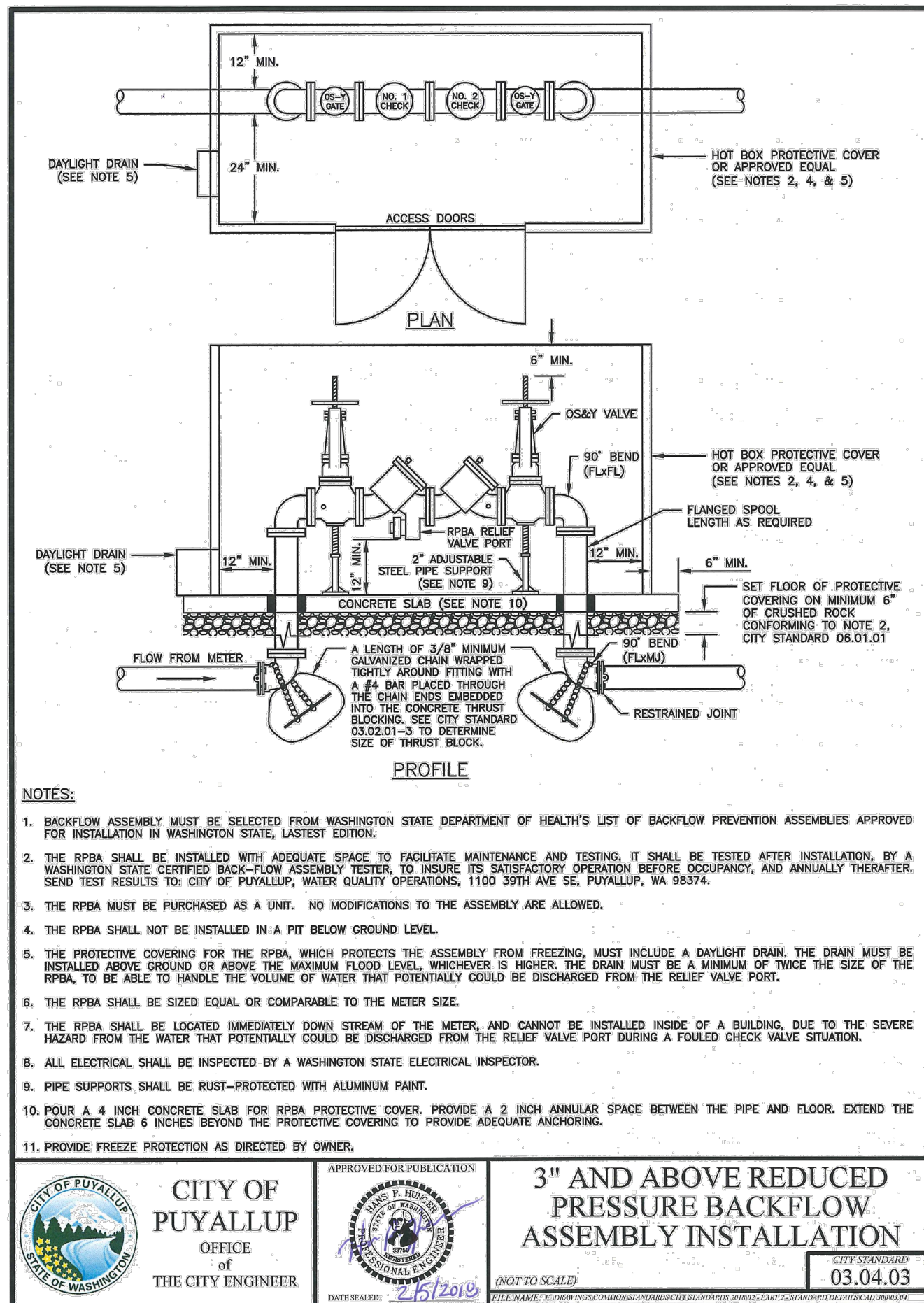
NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS

HOMEWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

JONATHAN M. LOWRY
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
56042
11/05/21

LE JOB # 18009.1
PROJECT DATE: 11/01/2021
CHECKED BY: JML
DRAWN BY: DMM
APPROVED BY: JML
SHEET: 16 OF 23

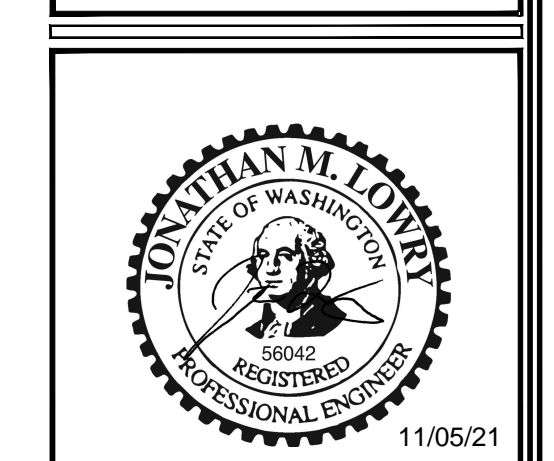
UTILITY DETAILS
C-8



REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS

HOMWOOD SUITES
 3500 S. MERIDIAN
 SOUTH HILL MALL
 PUYALLUP, WA 98373



LE JOB # 18009.1
 PROJECT DATE: 11/01/2021
 CHECKED BY: JML
 DRAWN BY: DMM
 APPROVED BY: JML
 SHEET: 17 OF 23

APPROVED
 BY: *Jonathan M. Lowry*
 CITY OF PUYALLUP
 ENGINEERING SERVICES
 DATE: 11/15/2021

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.
 THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.
 FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

CITY COMMENTS - 07-13-21
 ADDED CoP APPROVAL STAMP

11/05/21 09:09:26AM Z:\Lowry Shared Files\Projects - 2018\18009.1 - Puyallup, WA\Drawings\18009.1 - C - Notes & Details.dwg

NOTES FOR: INSIDE DROP SANITARY SEWER MANHOLE

- NEAT LINE CUTS SHALL BE SEALED AT TOP WITH A HOT PAVING GRADE ASPHALT AND FACE OF CUT TACKED. ASPHALT DEPTH TO MATCH EXISTING.
- TOP OF SHELF, SLOPE 1/2" PER FOOT MINIMUM, CONSTRUCT IN FIELD CHANNEL AND SHELF TO THE CROWN OF PIPE.
- MANHOLE RING SHALL CONFORM TO SECTION R, ASTM C 478 (ASHTO M-199) AND MEET ALL OSHA REQUIREMENTS. MANHOLE RUNGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY A LEAK IS PROHIBITED. SEE CITY STANDARD DETAIL NO. 06.01.04 & 06.01.05
- PRECAST BASE SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM. DROP INLET PIPE HOLE MAY BE FIELD CONSTRUCTED.
- KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS MANHOLE WALL THICKNESS. MINIMUM DISTANCE BETWEEN HOLES IS 8".
- PRECAST CONCRETE MANHOLE COMPONENTS SHALL CONFORM TO ASTM C 478.
- FLEXIBLE JOINTS SHALL BE RUBBER GASKETED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. MORTARED, DRY-PAKED, OR CAST-IN-PLACE JOINTS WILL BE PERMITTED ONLY FOR CONNECTIONS TO OR THROUGH MANHOLES. A FLEXIBLE GASKETED JOINT SHALL BE INSTALLED WITHIN ONE (1) FOOT OF EACH CONNECTION TO MANHOLES. CONNECTIONS TO MANHOLE SHALL UTILIZE A KOR N SEAL CONNECTION MORTARED. CONNECTIONS TO THESE STRUCTURES WITH PVC PIPE SHALL UTILIZE A MANHOLE COUPLING AND RUBBER GASKET.
- MANHOLE RING AND COVER: THE COVER SHALL BE MARKED WITH "SEWER" IN TWO (2) INCH RAISED LETTERS (SEE CITY STANDARD DETAILS NO. 06.01.02 AND 06.01.03 FOR ADDITIONAL INFORMATION).
- THE MAXIMUM CHANGE IN FLOW DIRECTION IN MANHOLES SHALL BE 90 DEGREES. FOR ALL CHANGES IN FLOW DIRECTION GREATER THAN 45 DEGREES, A MINIMUM DROP OF 0.10 FEET BETWEEN INVERTS SHALL BE PROVIDED AND CHANNELIZATION PROVIDED.

CITY OF PUYALLUP
INSIDE DROP SANITARY SEWER MANHOLE (NOTES)

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 04/11/2021
DATE CHECKED: 04/11/21
CITY STANDARD: 04.01.03

CITY OF PUYALLUP
CATCH BASIN FRAME AND GRATE/VANED GRATE

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 02/01/2021
DATE CHECKED: 02/01/21
CITY STANDARD: 02.01.05

NOTES:

- MATERIAL SHALL CONFORM TO SECTION 9-05.15 "METAL CASTINGS" OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" PUBLISHED BY THE STATE DEPARTMENT OF TRANSPORTATION AND AMERICAN PUBLIC WORKS ASSOCIATION, WASHINGTON STATE CHAPTER.
- THE NAME OF THE MANUFACTURE AND DIRECTION OF FLOW SHALL BE EMBOSSED ON THE TOP SURFACE OF EACH GRATE. LETTERING TO BE RECESSED 1/16".
- THE MATERIAL USED FOR THE GRATE SHALL BE DESIGNATED BY EMBASSING EITHER DI (FOR DUCTILE IRON) OR CS (FOR CAST STEEL) NEAR THE NAME OF THE MANUFACTURER.
- DIMENSIONS SHALL HAVE A +/- 1/16" TOLERANCE, EXCEPT AS NOTED.
- EDGES SHALL HAVE 1/8" RADII.
- WELDING IS NOT PERMITTED.
- AS AN ALTERNATE, 8 PADS 1 1/2" x 3/4" x 1/8", INTEGRALLY CAST WITH THE GRATE, MAY BE USED.

GRATE
29 1/4" x 29 1/2" x 1 1/2" CAST IRON FRAME
1" OPENING (TYPICAL) 11 SLOTS EACH SIDE AT 45°
DUCTILE IRON GRATE
SECTION A-A
1 5/8" x 2 1/4" x 1/2"

VANED GRATE
Alternate (See note 7)
SECTION B-B
SECTION C-C
SECTION D-D VANE DETAIL

CITY OF PUYALLUP
CATCH BASIN TYPE 1 (GUTTER DRAIN)

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 02/01/2021
DATE CHECKED: 02/01/21
CITY STANDARD: 02.01.03

NOTES:

- MAXIMUM LENGTH OF PIPE BETWEEN CATCH BASINS SHALL BE 400'.
- MAXIMUM GUTTER LINE FLOW LENGTH SHALL BE 300'.
- TYPE I CATCH BASIN IS USED FOR DEPTHS LESS THAN 5'-0" FROM TOP OF GRATE TO I.E. (PIPE INVERT).
- PRECAST BASE SECTION SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. KNOCKOUTS SHALL BE ON 4 SIDES WITH A MAXIMUM DIAMETER OF 20" TO PROVIDE FOR A MINIMUM SUMP DEPTH OF 18".
- REINFORCING BARS SHALL BE CUT OR BENT AS REQUIRED TO CLEAR CUTOUTS.
- CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (ASHTO M 199) AND ASTM C 890 UNLESS OTHERWISE NOTED.
- THE APRON SHALL BE 8" IN DEPTH.
- CATCH BASIN MARKER WILL BE AFFIXED WITH MANUFACTURER'S EPOXY IN DRY WEATHER, 40 DEGREES OR WARMER. IF CURB EXISTS MARKER IS PLACED ON TOP OF CURB. IF A RAISED EDGE PLACE MARKER ON THE WEDGE. IF NO CURB PLACE ON PAVEMENT ON SIDE LEAST EXPOSED TO TRAFFIC

PLAN VIEW
SECTION VIEW
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

CITY OF PUYALLUP
CATCH BASIN TYPE 1 (AREA DRAIN)

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 02/01/2021
DATE CHECKED: 02/01/21
CITY STANDARD: 02.01.02

NOTES:

- MAXIMUM LENGTH OF PIPE BETWEEN CATCH BASINS SHALL BE 400'.
- TYPE I CATCH BASIN IS USED FOR DEPTHS LESS THAN 5'-0" FROM TOP OF GRATE TO I.E. (PIPE INVERT).
- PRECAST BASE SECTION SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. KNOCKOUTS SHALL BE ON 4 SIDES WITH A MAXIMUM DIAMETER OF 20" TO PROVIDE FOR A MINIMUM SUMP DEPTH OF 18".
- THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION SHALL NOT EXCEED 1/2" PER FOOT.
- CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (ASHTO M 199) AND ASTM C 890 UNLESS OTHERWISE NOTED.
- CATCH BASIN MARKER WILL BE AFFIXED WITH MANUFACTURER'S EPOXY IN DRY WEATHER, 40 DEGREES OR WARMER. IF CURB EXISTS MARKER IS PLACED ON TOP OF CURB. IF A RAISED EDGE PLACE MARKER ON THE WEDGE. IF NO CURB PLACE ON PAVEMENT ON SIDE LEAST EXPOSED TO TRAFFIC

PLAN VIEW
SECTION VIEW
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

CITY OF PUYALLUP
CATCH BASIN TYPE II

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 02/01/2021
DATE CHECKED: 02/01/21
CITY STANDARD: 02.01.04

NOTES:

- MAXIMUM LENGTH OF PIPE BETWEEN CATCH BASINS SHALL BE 400'.
- MAXIMUM GUTTER LINE FLOW LENGTH SHALL BE 300'.
- TYPE II CATCH BASIN IS USED FOR DEPTHS GREATER THAN 5'-0" FROM TOP OF GRATE TO I.E. (PIPE INVERT).
- PRECAST BASE SECTION SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL THE PIPE OUTER DIAMETER PLUS THE MANHOLE WALL THICKNESS.
- SEE CITY STANDARD DETAIL NO. 02.01.01 FOR ADDITIONAL INFORMATION REGARDING INSTALLATION OF MANHOLE SECTION.
- CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (ASHTO M 199) AND ASTM C 890 UNLESS OTHERWISE NOTED.
- CATCH BASIN MARKER WILL BE AFFIXED WITH MANUFACTURER'S EPOXY IN DRY WEATHER, 40 DEGREES OR WARMER. IF CURB EXISTS MARKER IS PLACED ON TOP OF CURB. IF A RAISED EDGE PLACE MARKER ON THE WEDGE. IF NO CURB PLACE ON PAVEMENT ON SIDE LEAST EXPOSED TO TRAFFIC

PLAN VIEW
SECTION VIEW
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

CITY OF PUYALLUP
STORM SEWER MANHOLE

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 02/01/2021
DATE CHECKED: 02/01/21
CITY STANDARD: 02.01.01

NOTES:

- THE CONSTRUCTION AND INSTALLATION OF STORM SEWER MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF WSDOT SPEC. SECTION 7-05 AND ASTM C 478.
- THE FACE OF NEAT LINE CUTS IN EXISTING ASPHALT PAVEMENT SHALL BE TACK COATED AND THE TOP OF THE JOINT SHALL BE SEALED WITH A HOT PAVING GRADE ASPHALT.
- PRECAST RISER SECTION OR PRECAST BASE WITH INTEGRAL RISER SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS WITH A MINIMUM WALL THICKNESS OF 2". THE SIZE OF THE KNOCKOUT SHALL BE EQUAL TO THE PIPE OUTER DIAMETER PLUS THE MANHOLE WALL THICKNESS. THE MAXIMUM HOLE SIZE IS 36" FOR A 48" MANHOLE, 42" FOR A 54" MANHOLE, 60" FOR A 72" MANHOLE, AND 84" FOR A 96" MANHOLE.
- A FLEXIBLE GASKETED JOINT SHALL BE INSTALLED WITHIN 12" OF EACH CONNECTION TO A MANHOLE. THE CONNECTION OF CONCRETE OR DUCTILE IRON PIPE TO A MANHOLE SHALL BE CEMENT MORTARED. DUCTILE IRON PIPE SHALL BE SEALED WITH MASTIC AT THE CONNECTION POINT PRIOR TO BEING MORTARED. THE CONNECTION OF PVC PIPE TO A MANHOLE SHALL UTILIZE A MANHOLE COUPLING (SAND COLLAR) WITH A RUBBER GASKET.
- THE MANHOLE COVER SHALL BE MARKED WITH "STORM" OR "DRAIN" IN 2 INCH RAISED LETTERS. MANHOLE RING AND COVER SHALL CONFORM TO CITY STANDARD DETAIL NO. 06.01.03
- MANHOLE STEP AND LADDER SHALL CONFORM TO CITY STANDARD DETAILS NO. 06.01.04 AND 06.01.05

PLAN VIEW
SECTION VIEW
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

CITY OF PUYALLUP
MANHOLE FRAME AND COVER

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 06/01/2021
DATE CHECKED: 06/01/21
CITY STANDARD: 06.01.02

NOTES:

- EAST JORDAN IRON WORKS 24" "ERGO" AND OLYMPIC FOUNDRY MH41 RING & HINGE PUYALLUP COVER ARE PRE-APPROVED PRODUCTS AND SHALL BE USED FOR PUBLICLY-OWNED INFRASTRUCTURE. ALL OTHERS REQUIRE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION.
- MANHOLE FRAME AND COVERS SHOULD NOT BE LOCATED IN PEDESTRIAN PATHWAYS (E.G. SIDEWALKS, CROSSWALKS, ETC.) WHERE EXISTING OR PROPOSED CONDITIONS REQUIRE A MANHOLE FRAME AND COVER TO BE INSTALLED WITHIN A PEDESTRIAN PATHWAY, THE MANHOLE FRAME AND COVER SHALL BE ADA COMPLIANT.
- NON-ROCKING FIT FOR MANHOLE COVERS.
- CASTING TO BE SHOT BLENDED AND FREE FROM SURFACE SAND AND SCALE.
- CASTING TO BE SMOOTH, TRUE TO PATTERN, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINK HOLES, WARP, OR ANY OTHER DEFECTS WHICH COULD IMPAIR SERVICEABILITY.
- CASTINGS SHALL BE UNDATED.
- FOR STORM APPLICATIONS CAST LETTERS SHALL READ "STORM".
- INSTALL FRAME AND COVER IN ROADWAY WITH HINGED SIDE OF ASSEMBLY POINTED TOWARD ONCOMING TRAFFIC.
- THE CITY SHALL HAVE THE RIGHT TO REQUIRE INSPECTION AND APPROVAL OF ALL CASTINGS PRIOR TO PAINTING.
- REPAIR OR DEFECTS BY WELDING, OR BY THE USE OF "SMOOTH-ON" OR SIMILAR MATERIAL WILL NOT BE PERMITTED.
- MANHOLE RING AND COVER SHALL BE FREE OF POROSITY, SHRINK CAVITIES, COLD SHOTS OR CRACKS OR ANY SURFACE DEFECTS WHICH WOULD IMPAIR SERVICEABILITY.
- FRAME HEIGHT MAY BE 4" FOR OVERLAYS AND PAVEMENT REHABILITATION PROJECTS, WITH WRITTEN APPROVAL BY THE CITY ENGINEER.

PLAN VIEW
SECTION VIEW
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

CITY OF PUYALLUP
MANHOLE FRAME AND COVER

DEVELOPMENT ENGINEERING and PUBLIC WORKS DEPARTMENTS

APPROVED BY: COLLEEN HARRIS
CHECKED BY: LINDA LIAN
DATE APPROVED: 06/01/2021
DATE CHECKED: 06/01/21
CITY STANDARD: 06.01.02

NOTES:

- EAST JORDAN IRON WORKS 24" "ERGO" AND OLYMPIC FOUNDRY MH41 RING & HINGE PUYALLUP COVER ARE PRE-APPROVED PRODUCTS AND SHALL BE USED FOR PUBLICLY-OWNED INFRASTRUCTURE. ALL OTHERS REQUIRE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION.
- MANHOLE FRAME AND COVERS SHOULD NOT BE LOCATED IN PEDESTRIAN PATHWAYS (E.G. SIDEWALKS, CROSSWALKS, ETC.) WHERE EXISTING OR PROPOSED CONDITIONS REQUIRE A MANHOLE FRAME AND COVER TO BE INSTALLED WITHIN A PEDESTRIAN PATHWAY, THE MANHOLE FRAME AND COVER SHALL BE ADA COMPLIANT.
- NON-ROCKING FIT FOR MANHOLE COVERS.
- CASTING TO BE SHOT BLENDED AND FREE FROM SURFACE SAND AND SCALE.
- CASTING TO BE SMOOTH, TRUE TO PATTERN, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINK HOLES, WARP, OR ANY OTHER DEFECTS WHICH COULD IMPAIR SERVICEABILITY.
- CASTINGS SHALL BE UNDATED.
- FOR STORM APPLICATIONS CAST LETTERS SHALL READ "STORM".
- INSTALL FRAME AND COVER IN ROADWAY WITH HINGED SIDE OF ASSEMBLY POINTED TOWARD ONCOMING TRAFFIC.
- THE CITY SHALL HAVE THE RIGHT TO REQUIRE INSPECTION AND APPROVAL OF ALL CASTINGS PRIOR TO PAINTING.
- REPAIR OR DEFECTS BY WELDING, OR BY THE USE OF "SMOOTH-ON" OR SIMILAR MATERIAL WILL NOT BE PERMITTED.
- MANHOLE RING AND COVER SHALL BE FREE OF POROSITY, SHRINK CAVITIES, COLD SHOTS OR CRACKS OR ANY SURFACE DEFECTS WHICH WOULD IMPAIR SERVICEABILITY.
- FRAME HEIGHT MAY BE 4" FOR OVERLAYS AND PAVEMENT REHABILITATION PROJECTS, WITH WRITTEN APPROVAL BY THE CITY ENGINEER.

PLAN VIEW
SECTION VIEW
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

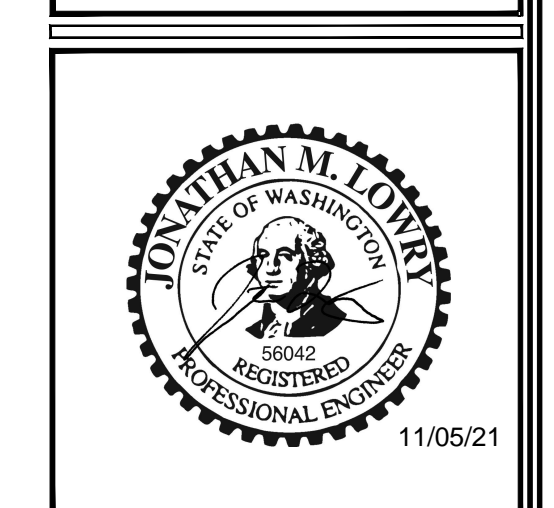
REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS

REVISIONS

NO.	DATE	DESCRIPTION
07-15-21		CITY COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373



LE JOB # 18009.1
PROJECT DATE: 11/01/2021
CHECKED BY: JML
DRAWN BY: DMM
APPROVED BY: JML
SHEET: 18 OF 23

UTILITY DETAILS

C-8.2

CITY COMMENTS - 07-13-21

- ADDED 06.01.02 SEWER DETAIL
- ADDED CoP APPROVAL STAMP

APPROVED
BY: *Jonathan M. Lowry*
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

REVISIONS
07-15-21 - CITY COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

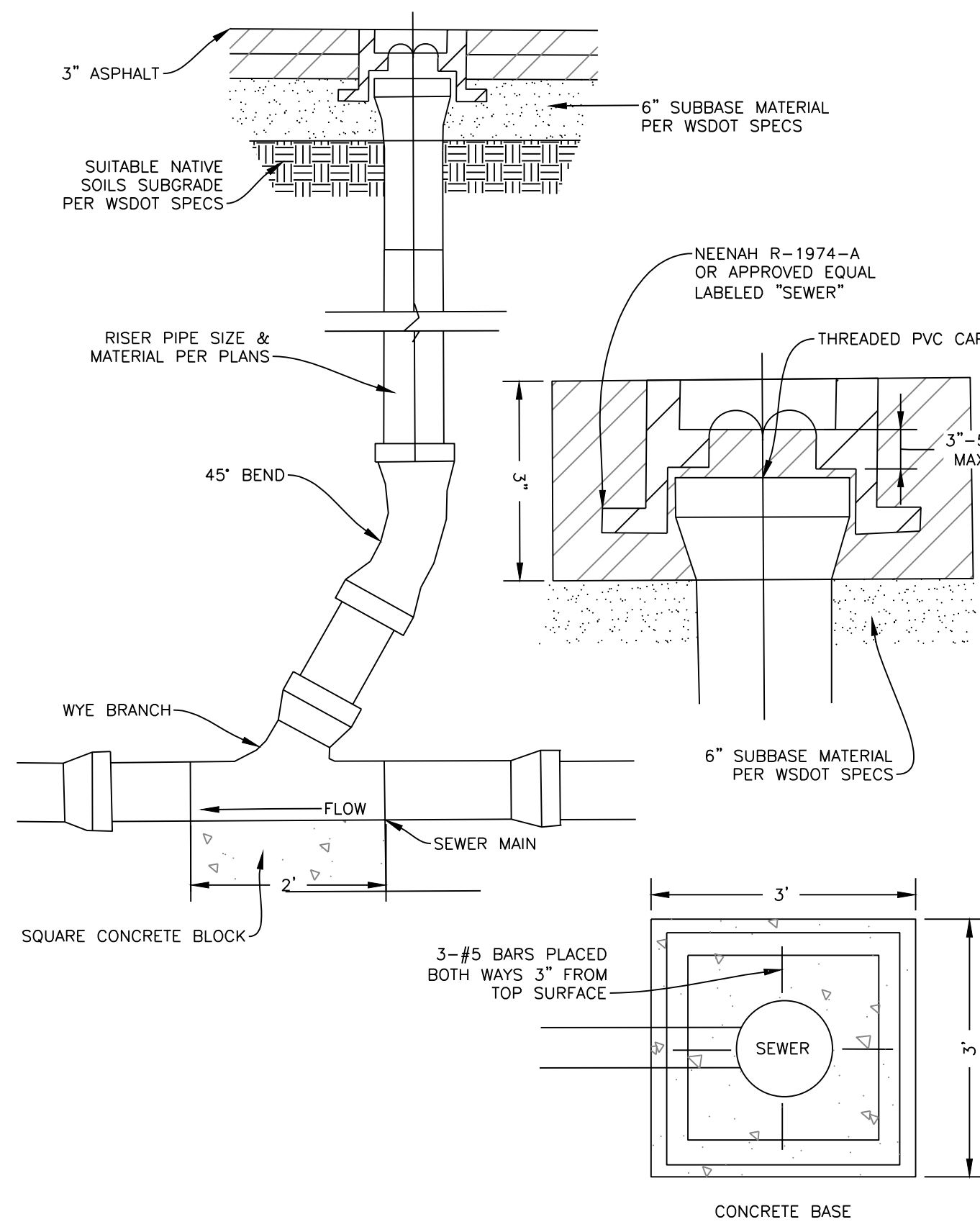


11/05/21

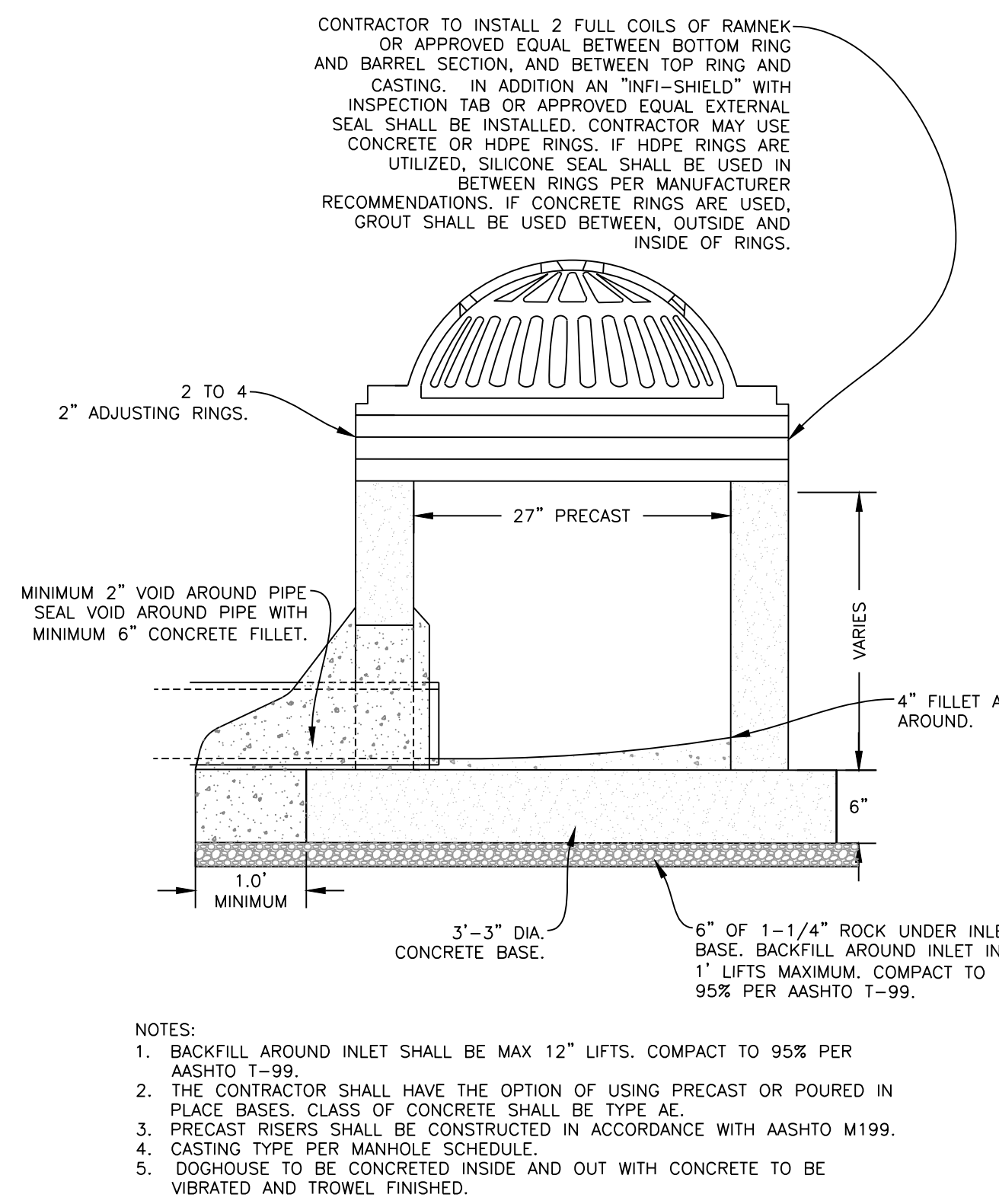
LE JOB #	18009.1
PROJECT DATE:	11/01/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	19 OF 23

UTILITY
DETAILS

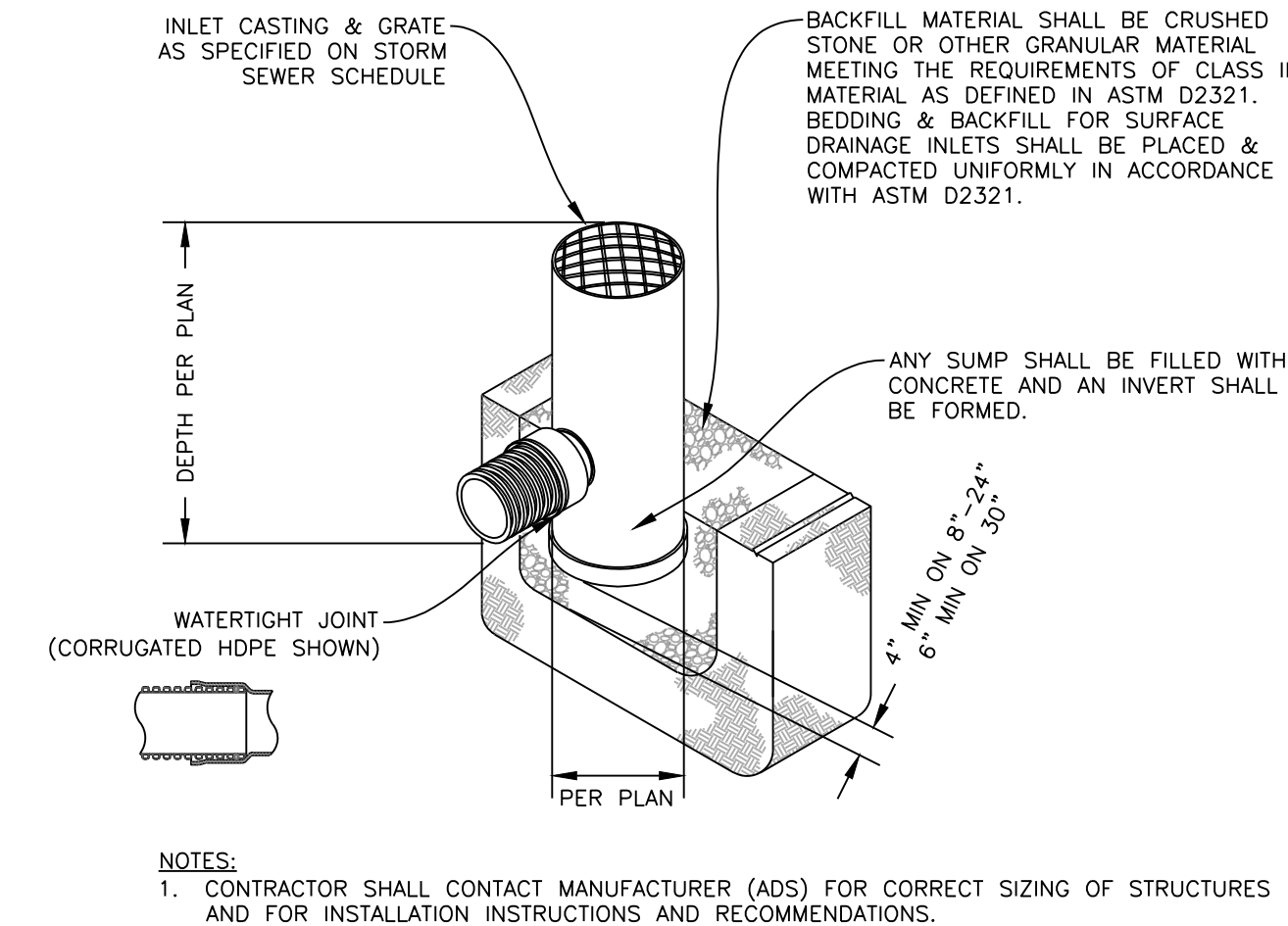
C-8.3



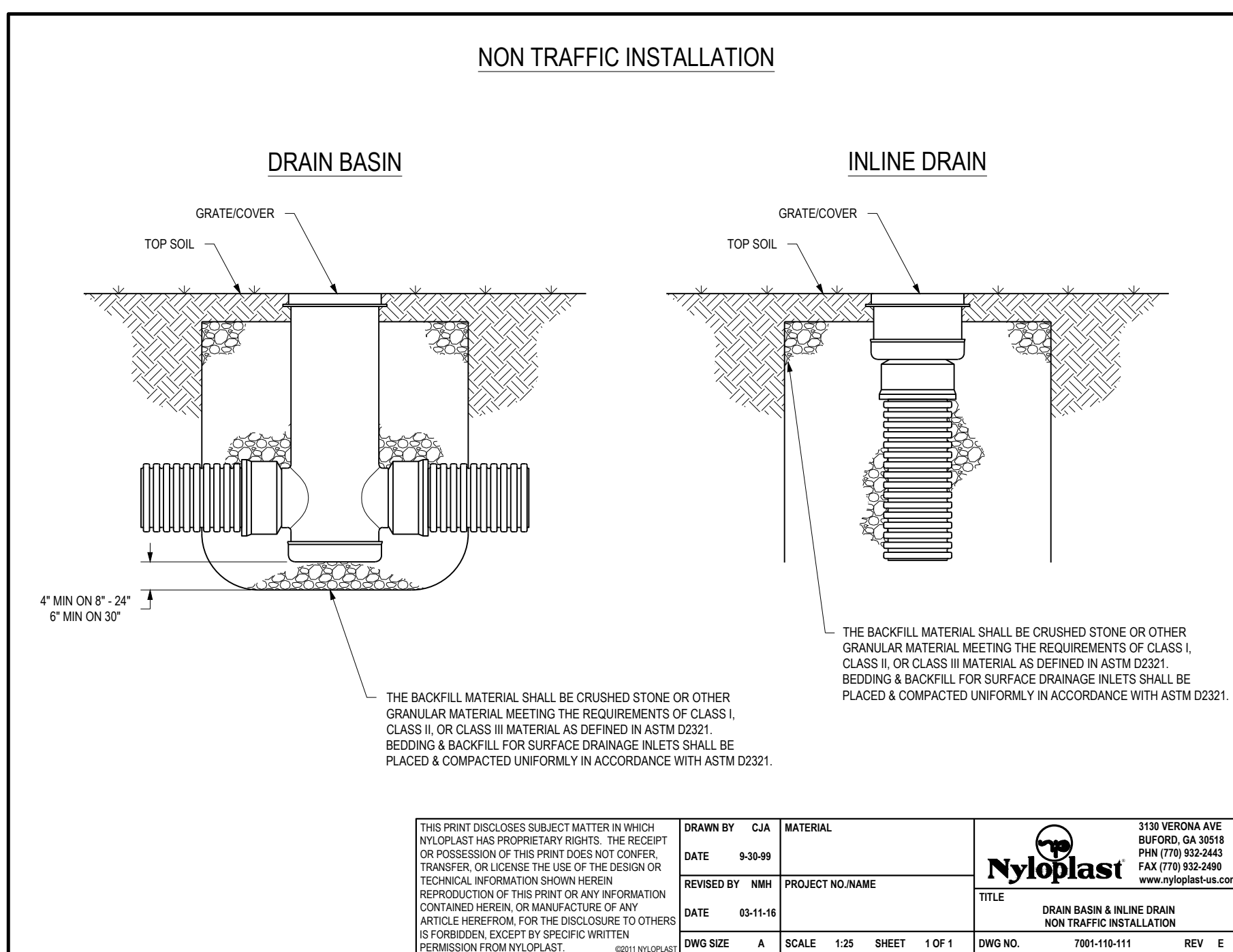
1 STORM SEWER CLEANOUT
(IN PAVEMENT)
N.T.S.



2 CONCRETE YARD INLET (YI)
N.T.S.



3 NYLOPLAST HDPE YARD INLET
N.T.S.

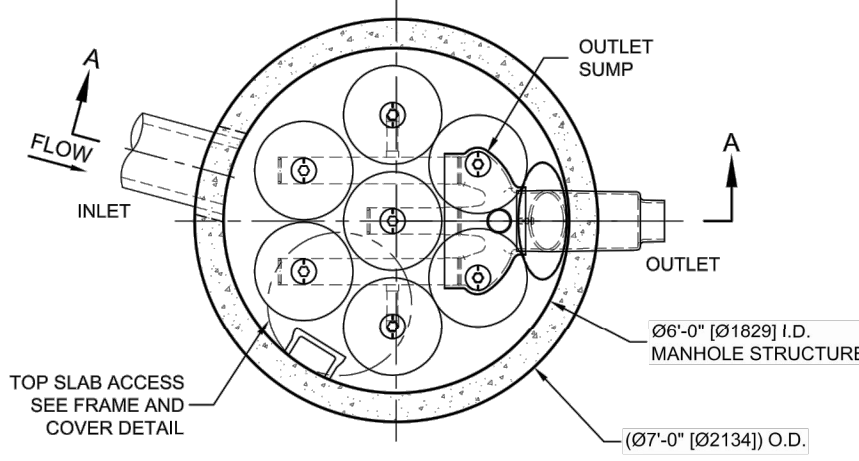


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DRAWN BY: CJA	DATE: 9-30-99	MATERIAL:
REVISOR BY: NMH	DATE: 05-11-16	PROJECT NO./NAME:
REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST.		TITLE: DRAIN BASIN & INLINE DRAIN NON TRAFFIC INSTALLATION
DWG SIZE: A	SCALE: 1:25	SHEET: 1 OF 1
DWG NO.: 786-116-111		REV: E

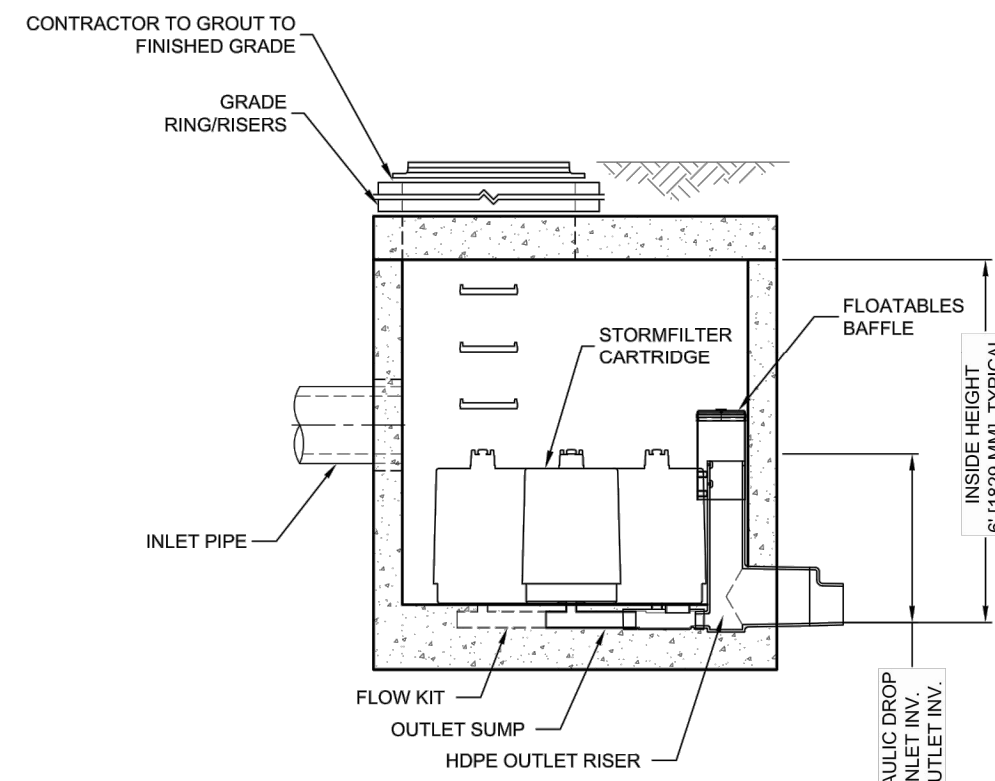
CITY COMMENTS - 07-13-21
• ADDED CoP APPROVAL STAMP

APPROVED
BY: *[Signature]*
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021
NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.
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PLAN VIEW
STANDARD OUTLET RISER
FLOWKIT: 42A



SECTION A-A

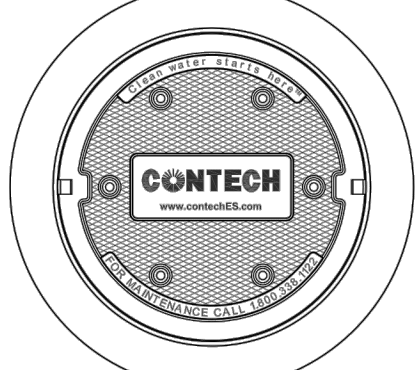


STORMFILTER DESIGN NOTES

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

CARTRIDGE SELECTION	PREFERRED STORM FILTER FOR WEST BASIN					
	27" (686 mm)	18" (458 mm)	LOW DROP			
CARTRIDGE HEIGHT	3.05' (930 mm)	2.3' (700 mm)	1.8' (550 mm)			
RECOMMENDED HYDRAULIC DROP (H)	2.1 (30)	1.67 (1.08)	1.0 (65)	2.1 (30)	1.67 (1.08)	1.0 (65)
SPECIFIC FLOW RATE (gpm/ft²) [L/m²]	22.5 [1.42]	18.78 [1.19]	11.25 [0.71]	15 [0.95]	12.53 [0.79]	7.5 [0.44]
CARTRIDGE FLOW RATE (gpm) [L/s]	150 [9.8]	100 [6.5]	50 [3.2]	100 [6.5]	75 [4.7]	50 [3.2]

* 1.67 gpm/ft² (1.08 L/m²) SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY.



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

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	SFM72
WATER QUALITY FLOW RATE (cfs) [L/s]	0.1105
PEAK FLOW RATE (cfs) [L/s]	1.1031
RETURN PERIOD OF PEAK FLOW (yrs)	100
CARTRIDGE HEIGHT (SEE TABLE ABOVE)	18"
NUMBER OF CARTRIDGES REQUIRED	7
CARTRIDGE FLOW RATE	7.5
MEDIA TYPE (PERLITE, ZPG, PSORB)	ZPG

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	413.35	N-12	12"
INLET PIPE #2	-	-	-
OUTLET PIPE	411.05	N-12	12"

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT

NOTES/SPECIAL REQUIREMENTS:
* PER ENGINEER OF RECORD

GENERAL NOTES

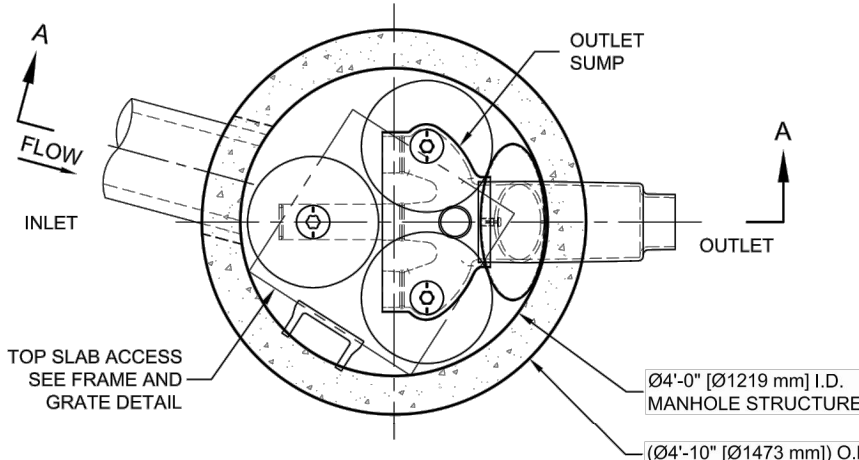
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH (1) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED VAULT DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com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

INSTALLATION NOTES

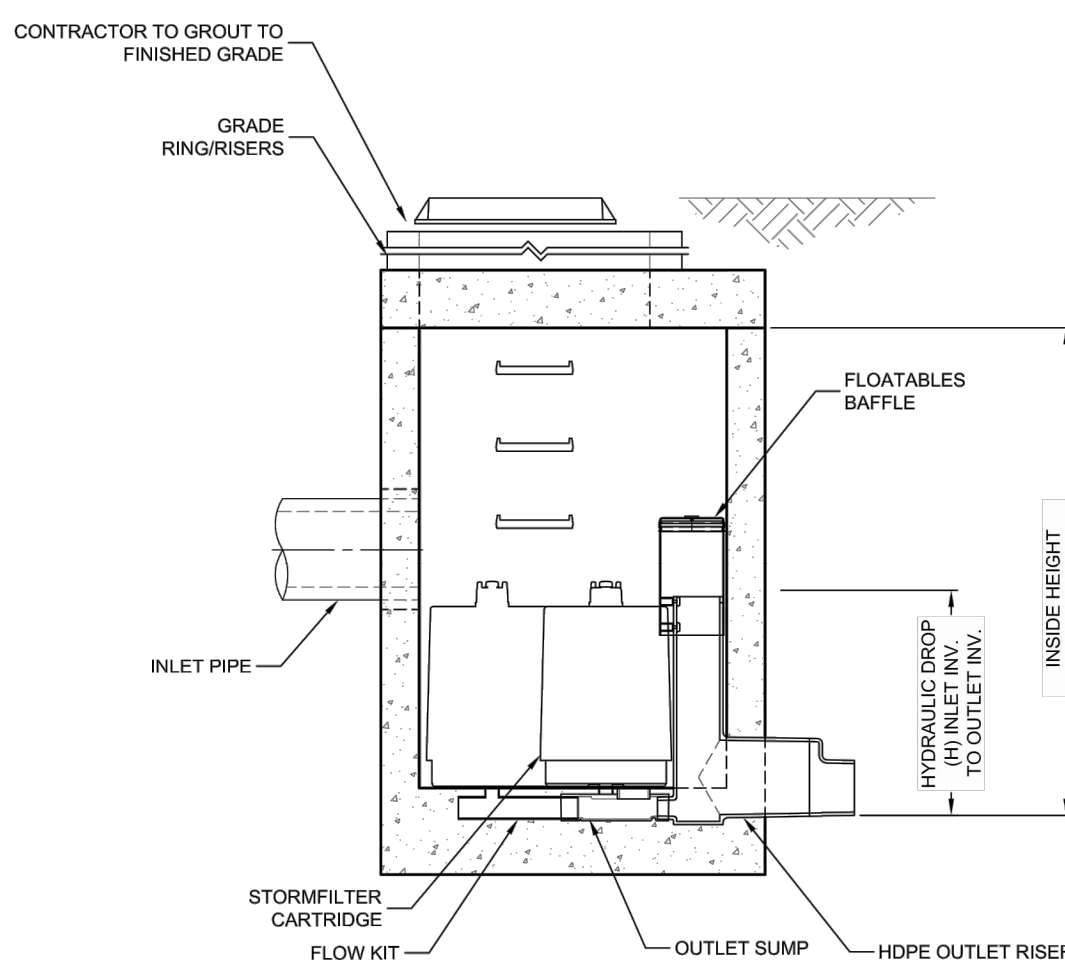
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
- CONTRACTOR TO INSTALL JOINT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



SFMH72
STORMFILTER
STANDARD DETAIL



PLAN VIEW
STANDARD OUTLET RISER
FLOWKIT: 40A



SECTION A-A

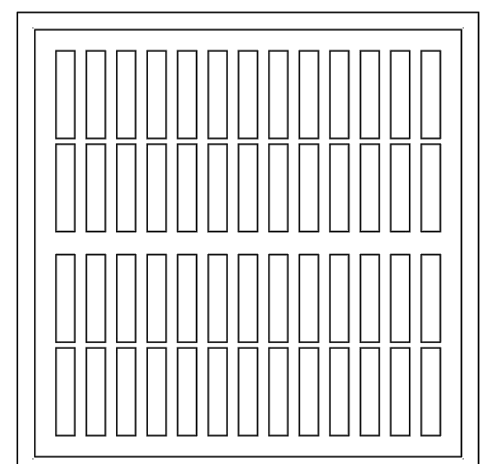


STORMFILTER DESIGN NOTES

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

CARTRIDGE SELECTION	STORM FILTER FOR EAST BASIN					
	27" (686 mm)	18" (458 mm)	LOW DROP			
CARTRIDGE HEIGHT	3.05' (930 mm)	2.3' (700 mm)	1.8' (550 mm)			
RECOMMENDED HYDRAULIC DROP (H)	2.1 (30)	1.67 (1.08)	1.0 (65)	2.1 (30)	1.67 (1.08)	1.0 (65)
SPECIFIC FLOW RATE (gpm/ft²) [L/m²]	21.30 [1.30]	17.42 [1.09]	11.25 [0.71]	15 [0.95]	12.53 [0.79]	7.5 [0.44]
CARTRIDGE FLOW RATE (gpm) [L/s]	64 [4.1]	52 [3.3]	28 [1.8]	45 [2.8]	38 [2.4]	23 [1.5]

* 1.67 gpm/ft² (1.08 L/m²) SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY.



30" [762] SQ. FRAME AND GRATE
(ALSO AVAILABLE IN ROUND)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	CB89
WATER QUALITY FLOW RATE (cfs) [L/s]	0.0489
PEAK FLOW RATE (cfs) [L/s]	0.4898
RETURN PERIOD OF PEAK FLOW (yrs)	100
CARTRIDGE HEIGHT (SEE TABLE ABOVE)	18"
NUMBER OF CARTRIDGES REQUIRED	3
CARTRIDGE FLOW RATE	7.5
MEDIA TYPE (PERLITE, ZPG, PSORB)	ZPG

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	-	-	-
INLET PIPE #2	-	-	-
OUTLET PIPE	416.50	N-12	12"

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT

NOTES/SPECIAL REQUIREMENTS:
* PER ENGINEER OF RECORD

GENERAL NOTES

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

INSTALLATION NOTES

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



SFMH48
STORMFILTER
STANDARD DETAIL

REVISIONS
11-05-21 - CITY & FRUITLAND MUTUAL WATER COMMENTS

HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373



LE JOB #	18009.1
PROJECT DATE:	11/01/2021
CHECKED BY:	JML
DRAWN BY:	DMM
APPROVED BY:	JML
SHEET:	20 OF 23

APPROVED
Jonathan M. Lowry
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

UTILITY DETAILS

C-8.4

CITY & WATER COMMENTS - 11-05-21
• ADDED PLAN SHEET FOR STORMWATER PRODUCT MANUFACTURER DETAILS



MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-18a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LIFTED BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER; 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.50 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD. THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LIFTED BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DESIGNED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELLED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M35 DESIGNATION OF #3 OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADER DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FILL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR TURNING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

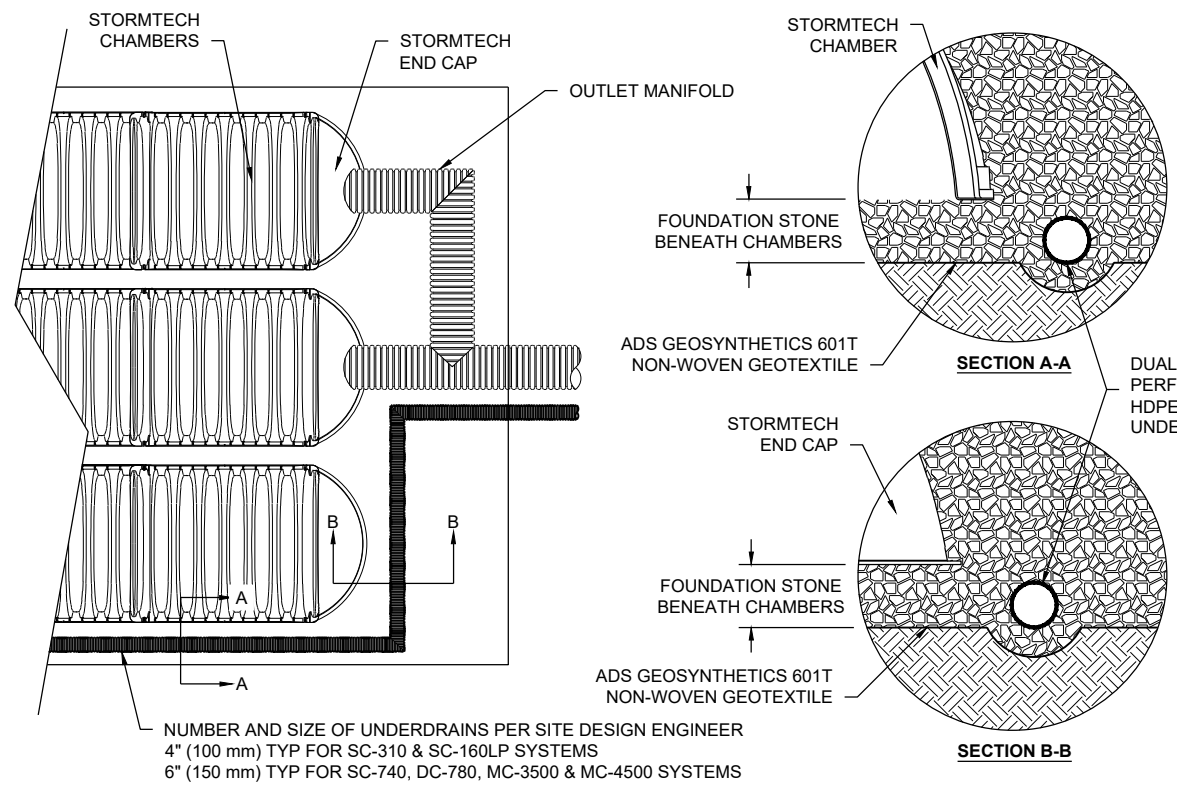
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

INSPECTION & MAINTENANCE

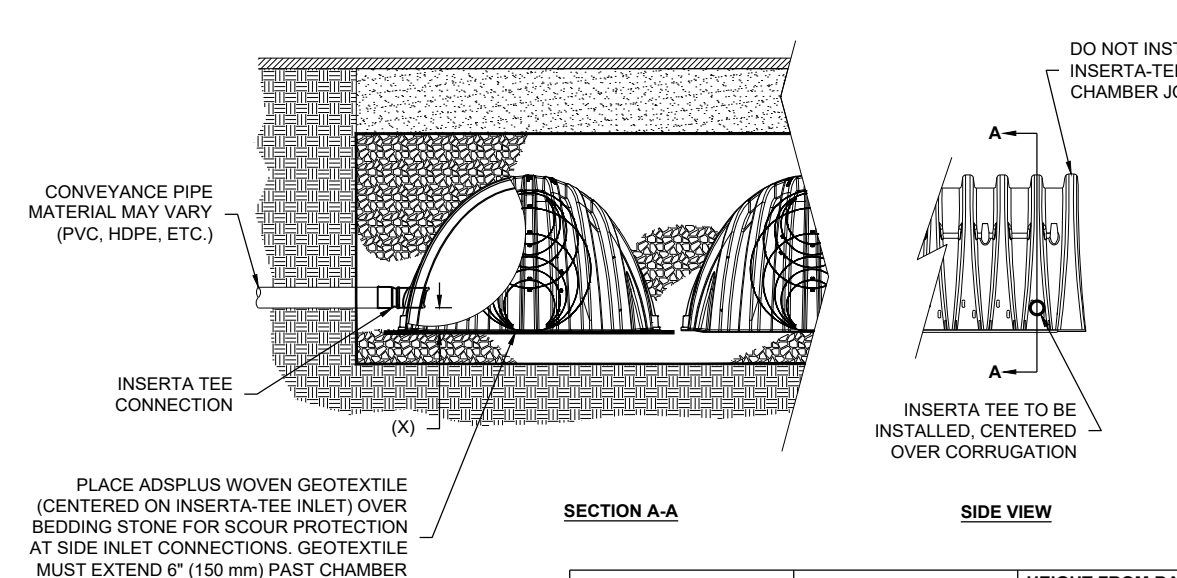
- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIUM ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFILL WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



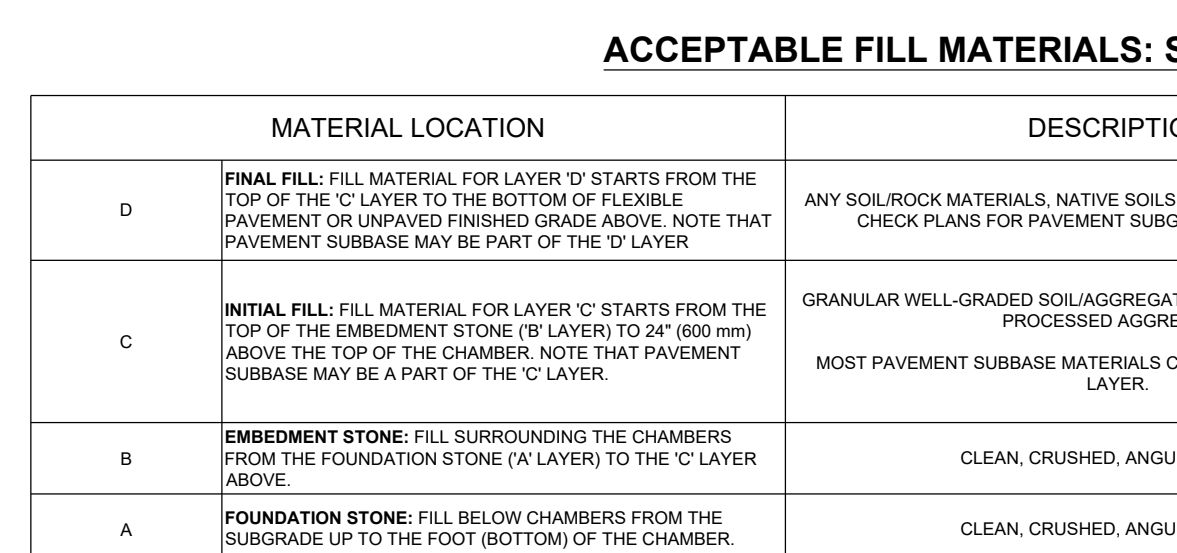
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)

NOTE: PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

6 INSERTA-TEE SIDE INLET DETAIL



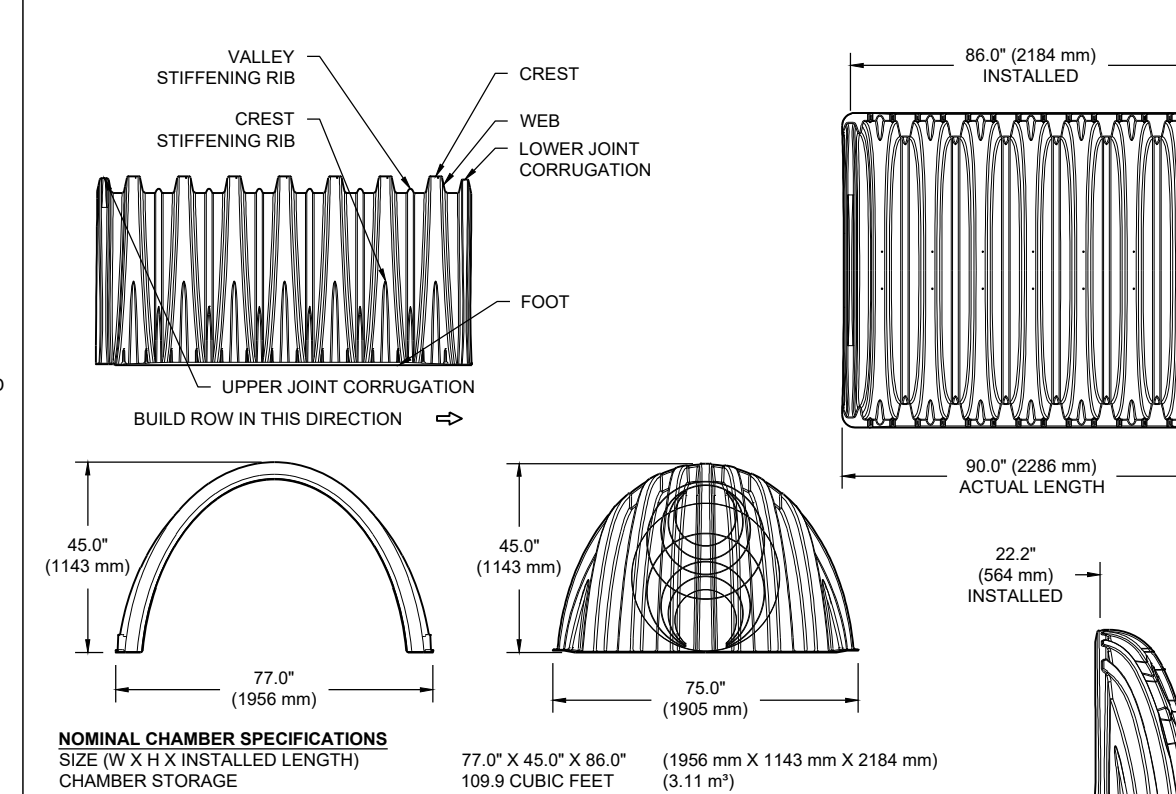
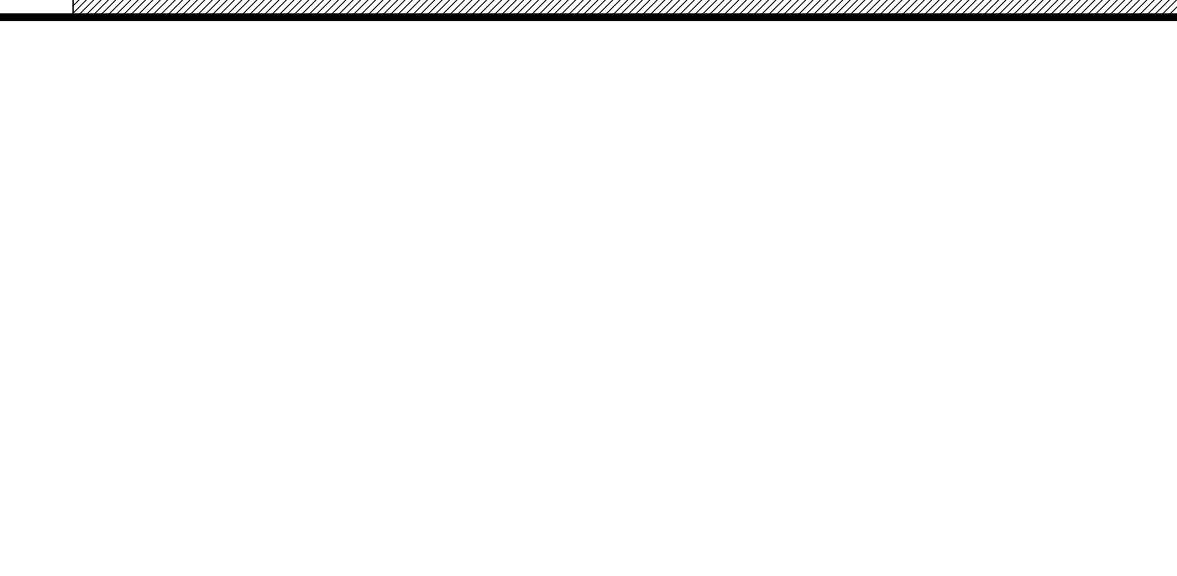
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR A LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2, A-3 OR AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ³ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ³ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- NOTES:**
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-18a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
 - MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 - PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 - REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 MC-3500 CROSS SECTION DETAIL

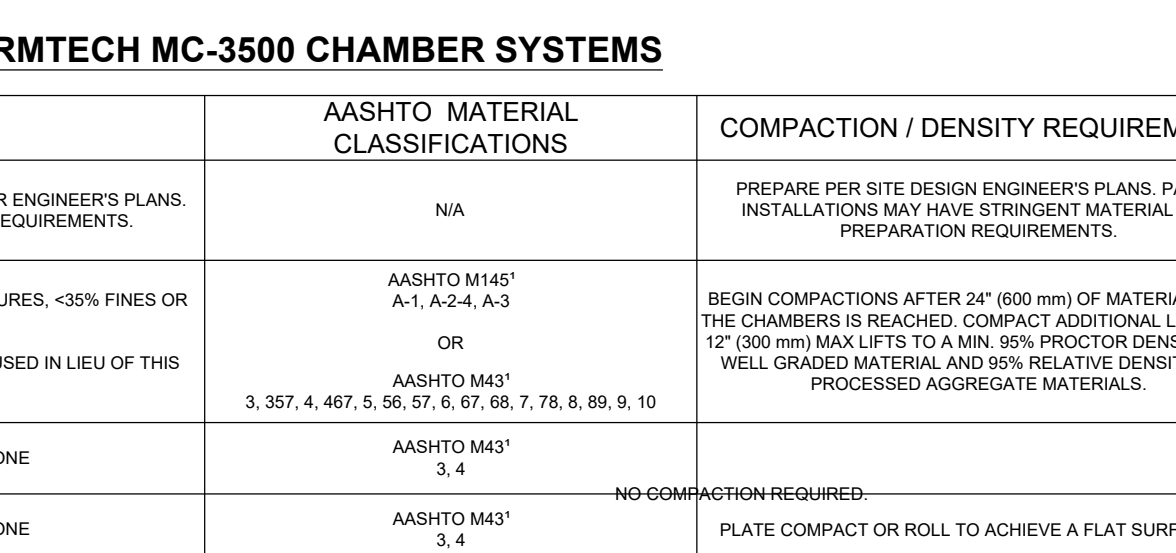


2 MC-3500 TECHNICAL SPECIFICATIONS

PART #	STUB	B	C
MC3500EP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500EP06B	---	---	0.66" (17 mm)
MC3500EP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500EP08B	---	---	0.81" (21 mm)
MC3500EP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500EP10B	---	---	0.93" (24 mm)
MC3500EP12B	12" (300 mm)	26.36" (670 mm)	---
MC3500EP12T	---	---	1.35" (34 mm)
MC3500EP15T	15" (375 mm)	23.30" (594 mm)	---
MC3500EP15B	---	---	1.56" (39 mm)
MC3500EP18T	18" (450 mm)	20.93" (530 mm)	---
MC3500EP18B	---	---	1.77" (45 mm)
MC3500EP24T	24" (600 mm)	14.48" (368 mm)	---
MC3500EP24B	---	---	2.06" (52 mm)
MC3500EP28B	30" (750 mm)	---	2.75" (70 mm)

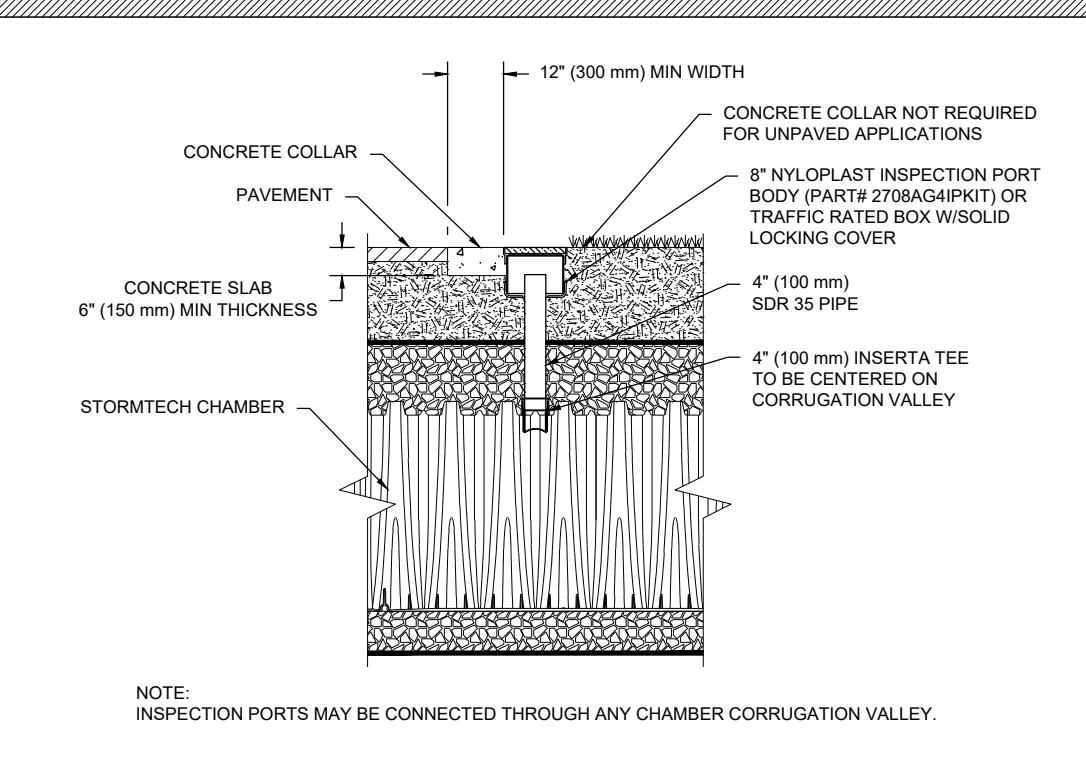
NOTE: ALL DIMENSIONS ARE NOMINAL.

STANDARD DETAILS

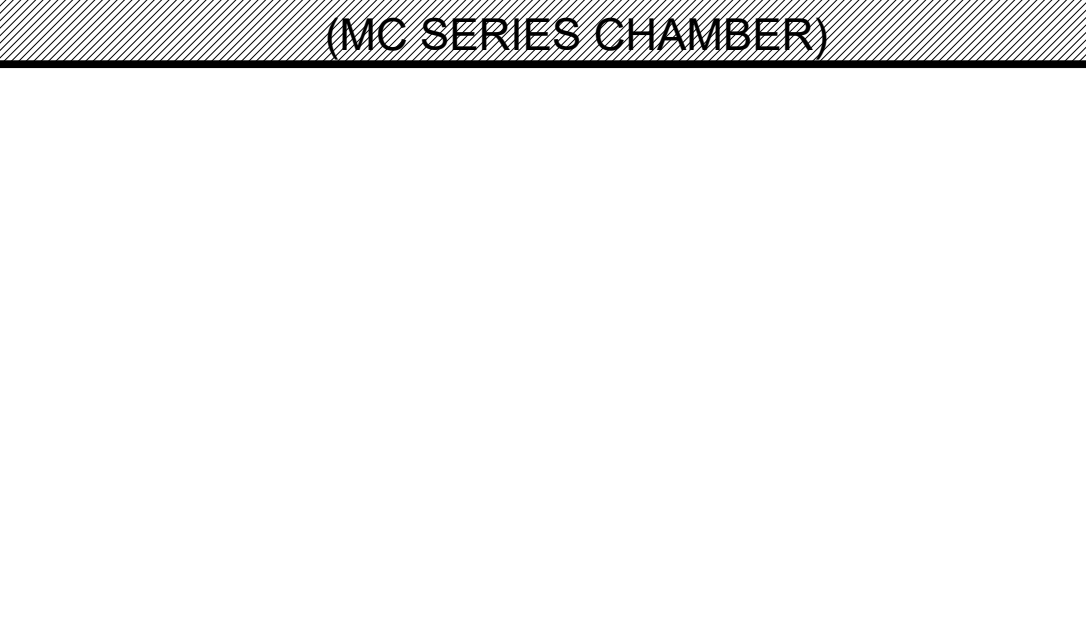


CUSTOM PARTIAL CUT INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12x24" (300x600 mm) SIZE ON SIDE AND 15x48" (375x1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

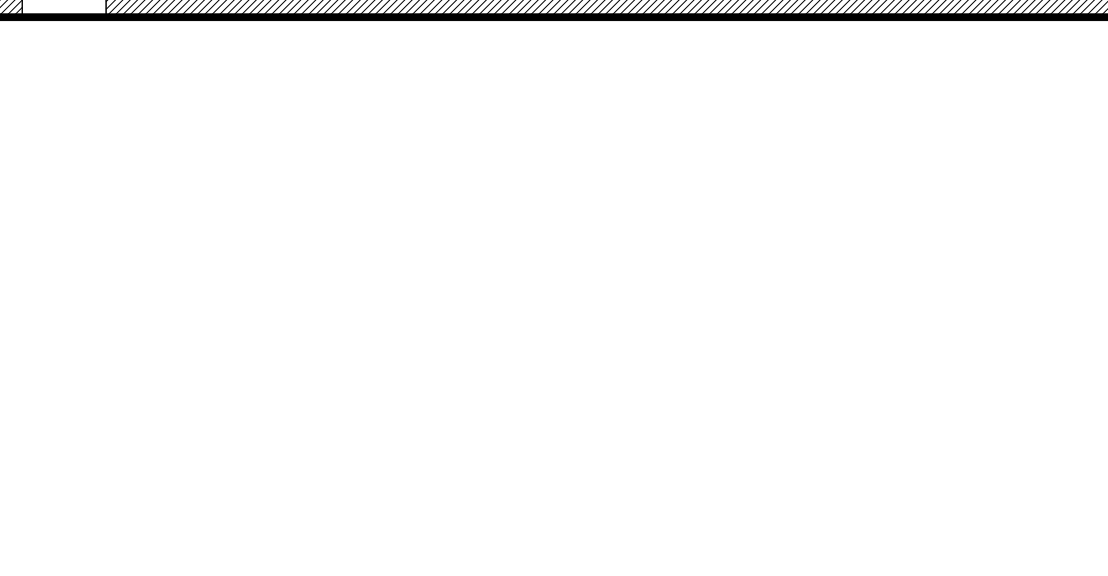
3 MC-3500 ISOLATOR ROW PLUS DETAIL



4 4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)



7 MC-SERIES END CAP INSERTION DETAIL



DATE: _____ PROJECT NO: _____ NOT TO SCALE

DRAWN: _____ REVIEWED: _____ REV: _____

MC-3500 STANDARD DETAILS

Stormtech
ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OH 43026

REVISIONS

NO.	DATE	DESCRIPTION

11-05-21 - CITY & FRUITLAND MUTUAL WATER COMMENTS

APPROVED
BY: _____
CITY OF PUYALLUP
ENGINEERING SERVICES
DATE: 11/15/2021

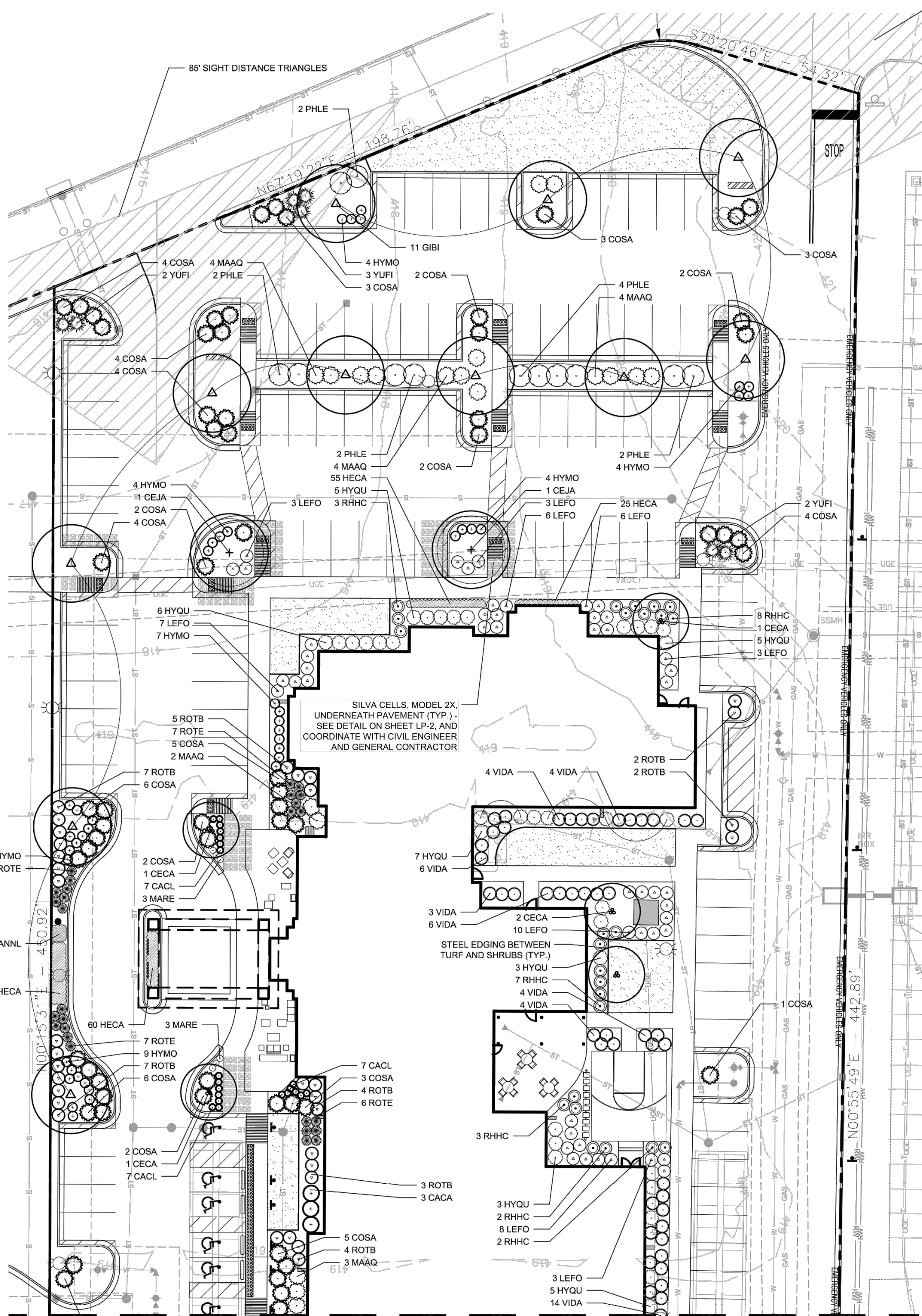
NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE ENGINEERING SERVICES MANAGER.

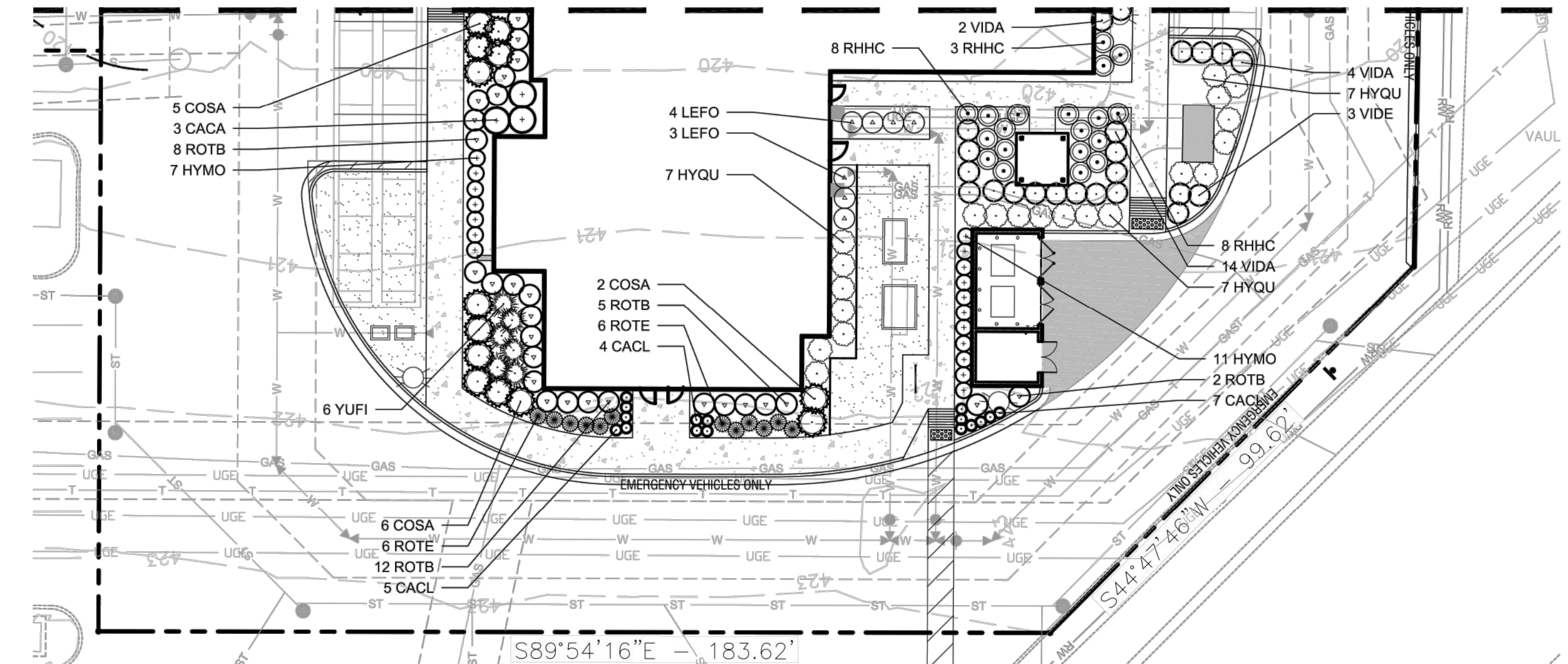
UTILITY DETAILS

C-8.5



85' SIGHT DISTANCE TRIANGLES

MATCHLINE - SEE SHEET BELOW LEFT



PLANTING LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	MIN. SIZE	SPACING	QUANTITY	REMARKS
TREES						
CEJA	<i>Cercidiphyllum japonicum</i>	Katsura Tree	2" cal., 8'-10' high	Per plan	2	
CECA	<i>Cercis canadensis</i> 'Forest Pansy'	Forest Pansy Redbud	2" cal., 8'-10' high	Per plan	5	Multitrunk, 3-5 canes
GIBI	<i>Ginkgo biloba</i> 'Autumn Gold'	Autumn Gold Ginkgo	2" cal., 8'-10' high	Per plan	11	
SHRUBS						
CACA	<i>Carpenteria californica</i>	Bush Anemone	#5 cont.	5' o.c.	6	
CACL	<i>Caryopteris x clandonensis</i> 'Dark Knight'	Dark Knight Caryopteris	#3 cont.	2' o.c.	37	
COSA	<i>Cotoneaster salicifolius</i> 'Repens'	Willowleaf Cotoneaster	#5 cont.	5' o.c.	76	
HYQU	<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea	#5 cont.	5' o.c.	55	
HYMO	<i>Hypericum moserianum</i>	St. Johnswort	#3 cont.	3' o.c.	60	
LEFO	<i>Leucothoe fontanesiana</i> 'Girard's Rainbow'	Rainbow Fetterbush	#5 cont.	4' o.c.	56	
MAAQ	<i>Mahonia aquifolium</i>	Oregon Grape	#5 cont.	5' o.c.	19	
MARE	<i>Mahonia repens</i>	Creeping Oregon Grape	#3 cont.	2' o.c.	6	
PHLE	<i>Philadelphus lewisii</i>	Mockorange	#5 cont.	6' o.c.	12	
RHHC	<i>Rhododendron</i> 'Hino Crimson'	Hino Crimson Azalea	#5 cont.	4' o.c.	44	
ROTE	<i>Rosa</i> 'Tequila'	Tequila Shrub Rose	#5 cont.	4' o.c.	39	
ROTB	<i>Rosmarinus officinalis</i> 'Tuscan Blue'	Upright Rosemary	#3 cont.	4' o.c.	60	
VIDA	<i>Viburnum davidii</i>	David's Viburnum	#5 cont.	4' o.c.	69	
YUFI	<i>Yucca filamentosa</i> 'Color Guard'	Color Guard Adam's Needle	#3 cont.	4' o.c.	13	
PERENNIALS AND ANNUALS						
ANNL	---	Annual color	6-pack	6' o.c.	96	Varieties per owner, as available
HECA	<i>Heuchera</i> 'Caramel'	Caramel Coral Bells	#1 cont.	12" o.c.	220	sub: 'H. 'Southern Comfort'
TURF						
	<i>Festuca</i> hybrids	Dwarf Tall Fescue Blend	Sod	---	---	Locally grown varieties

GENERAL GRADING AND PLANTING NOTES

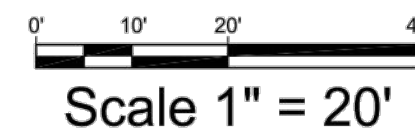
- BY SUBMITTING A PROPOSAL FOR THE LANDSCAPE PLANTING SCOPE OF WORK, THE CONTRACTOR CONFIRMS THAT HE HAS READ, AND WILL COMPLY WITH, THE ASSOCIATED NOTES, SPECIFICATIONS, AND DETAILS WITH THIS PROJECT.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EXISTING VEGETATION (EXCEPT WHERE NOTED TO REMAIN).
- IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
 - BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
 - CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
 - THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (BASED ON A SOIL TEST, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
 - ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 3" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
 - ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
 - SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
- ALL PLANT LOCATIONS ARE DIAGRAMMATIC. ACTUAL LOCATIONS SHALL BE VERIFIED WITH THE LANDSCAPE ARCHITECT OR DESIGNER PRIOR TO PLANTING. THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL REQUIREMENTS OF THE PERMITTING AUTHORITY ARE MET (I.E., MINIMUM PLANT QUANTITIES, PLANTING METHODS, TREE PROTECTION METHODS, ETC.).
 - THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DETERMINING PLANT QUANTITIES. PLANT QUANTITIES SHOWN ON LEGENDS AND CALLOUTS ARE FOR GENERAL INFORMATION ONLY. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE PLANT LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN (FOR INDIVIDUAL SYMBOLS) OR CALLOUT (FOR GROUNDCOVER PATTERNS) SHALL TAKE PRECEDENCE.
 - NO SUBSTITUTIONS OF PLANT MATERIALS SHALL BE ALLOWED WITHOUT THE WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT. IF SOME OF THE PLANTS ARE NOT AVAILABLE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING (VIA PROPER CHANNELS).
 - THE CONTRACTOR SHALL, AT A MINIMUM, PROVIDE REPRESENTATIVE PHOTOS OF ALL PLANTS PROPOSED FOR THE PROJECT. THE CONTRACTOR SHALL ALLOW THE LANDSCAPE ARCHITECT AND THE OWNER/OWNER'S REPRESENTATIVE TO INSPECT, AND APPROVE OR REJECT, ALL PLANTS DELIVERED TO THE JOBSITE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SUBMITTALS.
- THE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE IN A HEALTHY CONDITION FOR 90 DAYS AFTER ACCEPTANCE BY THE OWNER. REFER TO SPECIFICATIONS FOR CONDITIONS OF ACCEPTANCE FOR THE START OF THE MAINTENANCE PERIOD, AND FOR FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD.
- SEE SPECIFICATIONS AND DETAILS FOR FURTHER REQUIREMENTS.

MULCHES

AFTER ALL PLANTING IS COMPLETE, CONTRACTOR SHALL INSTALL 3" THICK LAYER OF 1-1/2" SHREDDED WOOD MULCH, NATURAL (UNDYED), IN ALL PLANTING AREAS (EXCEPT FOR TURF AND SEEDED AREAS). CONTRACTOR SHALL SUBMIT SAMPLES OF ALL MULCHES TO LANDSCAPE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO CONSTRUCTION. ABSOLUTELY NO EXPOSED GROUND SHALL BE LEFT SHOWING ANYWHERE ON THE PROJECT AFTER MULCH HAS BEEN INSTALLED (SUBJECT TO THE CONDITIONS AND REQUIREMENTS OF THE "GENERAL GRADING AND PLANTING NOTES" AND SPECIFICATIONS).

ROOT BARRIERS

THE CONTRACTOR SHALL INSTALL ROOT BARRIERS NEAR ALL NEWLY-PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS. ROOT BARRIERS SHALL BE "CENTURY" OR "DEEP-ROOT" 24" DEEP PANELS (OR EQUAL). BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. INSTALL PANELS PER MANUFACTURER'S RECOMMENDATIONS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.



Scale 1" = 20'

MATCHLINE - SEE SHEET ABOVE RIGHT

LOWRY
ENGINEERING
1111 WESTRAC DRIVE - SUITE 108
FARGO, NORTH DAKOTA 58103

REVISIONS

11-05-21	CITY & FRUITLAND MUTUAL WATER COMMENTS
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HOMWOOD SUITES
3500 S. MERIDIAN
SOUTH HILL MALL
PUYALLUP, WA 98373

EVERGREEN
DESIGN GROUP
(800) 680-6650
11801 Pierce Street, Suite 200
Riverside, CA 92505
www.EvergreenDesignGroup.com

LE JOB #	18009.1
PROJECT DATE:	11/05/2021
CHECKED BY:	LML/RM
DRAWN BY:	LML
APPROVED BY:	LML
SHEET:	22 OF 23

PLANTING PLAN

LP-1

APPROVED
FINAL LANDSCAPE PLAN

BY: _____
PLANNING DIVISION

DATE: _____

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE PLANNING DIRECTOR, DESIGNER OR PROJECT PLANNER.

11/4/2021

Lawrence M. Lesser
LAWRENCE M. LESSER
LICENSE NO. 1093
EXPIRES ON 6/8/2023

PLANTING SPECIFICATIONS

GENERAL

- A. QUALIFICATIONS OF LANDSCAPE CONTRACTOR
 1. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING.
 2. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.
 3. THE LANDSCAPE CONTRACTOR SHALL HOLD A VALID CONTRACTOR'S LICENSE ISSUED BY THE APPROPRIATE LOCAL JURISDICTION.
- B. SCOPE OF WORK
 1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK SPECIFIED HEREIN AND/OR SHOWN ON THE LANDSCAPE PLANS, NOTES, AND DETAILS.
 2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLYING MATERIALS AND SERVICES.
 3. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK.

PRODUCTS

- A. ALL MANUFACTURED PRODUCTS SHALL BE NEW.
 1. CONTAINER AND BALLED-AND-BURLAPPED PLANTS: FURNISH NURSERY-GROWN PLANTS COMPLYING WITH ANSI 380.1-2014. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE, AND WITH SIMILAR CLIMATIC CONDITIONS. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).
 2. TREES MAY BE PLANTED FROM CONTAINERS OR BALLED-AND-BURLAPPED (B&B), UNLESS SPECIFIED ON THE PLANTING LEGEND. B&B ROOT SYSTEMS ARE NOT ACCEPTABLE.
 3. ANY PLANT DEEMED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTABLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT AND OWNER SHALL BE THE SOLE JUDGES AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
 4. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADERS IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
 5. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER.
 6. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL. WHERE CALIPER MEASUREMENTS ARE USED, THE CALIPER SHALL BE CALCULATED AS ONE-HALF OF THE SUM OF THE CALIPER OF THE THREE LARGEST TRUNKS.
 7. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.
 8. SOD: PROVIDE WELL-ROOTED SOD OF THE VARIETY NOTED ON THE PLANS. SOD SHALL BE CUT FROM HEALTHY, MATURE TURF WITH SOIL THICKNESS OF 3/4" TO 1". EACH PALLET OF SOD SHALL BE ACCOMPANIED BY A CERTIFICATE FROM SUPPLIER STATING THE COMPOSITION OF THE SOD.
 9. TOPSOIL: SANDY TO CLAY LOAM TOPSOIL, FREE OF STONES LARGER THAN 1/2 INCH, FOREIGN MATTER, PLANTS, ROOTS, AND SEEDS.
 10. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISEMS/M, NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS. NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED.
 11. FERTILIZER: GRANULAR FERTILIZER CONSISTING OF NITROGEN, PHOSPHORUS, POTASSIUM, AND OTHER NUTRIENTS IN PROPORTIONS, AMOUNTS, AND RELEASE RATES RECOMMENDED IN A SOIL REPORT FROM A QUALIFIED SOIL TESTING AGENCY (SEE BELOW).
 12. MULCH: SIZE AND TYPE AS INDICATED ON PLANS. FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.
 13. TREE STAKING AND GUYING
 1. STAKES: 6" LONG GREEN METAL T-POSTS.
 2. GUY AND TIE WIRE: ASTM A 641, CLASS 1, GALVANIZED-STEEL WIRE, 2-STRAND, TWISTED, 0.106 INCH DIAMETER.
 3. STRAP CHAFING GUARD: REINFORCED NYLON OR CANVAS AT LEAST 1-1/2 INCH WIDE, WITH GROMMETS TO PROTECT TREE TRUNKS FROM DAMAGE.
 14. STEEL EDGING: PROFESSIONAL STEEL EDGING, 1/4 GAUGE THICK X 4 INCHES WIDE, FACTORY PAINTED DARK GREEN. ACCEPTABLE MANUFACTURERS INCLUDE CO-MET OR APPROVED EQUAL.
 15. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED. PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURER'S LABELED RATES.

METHODS

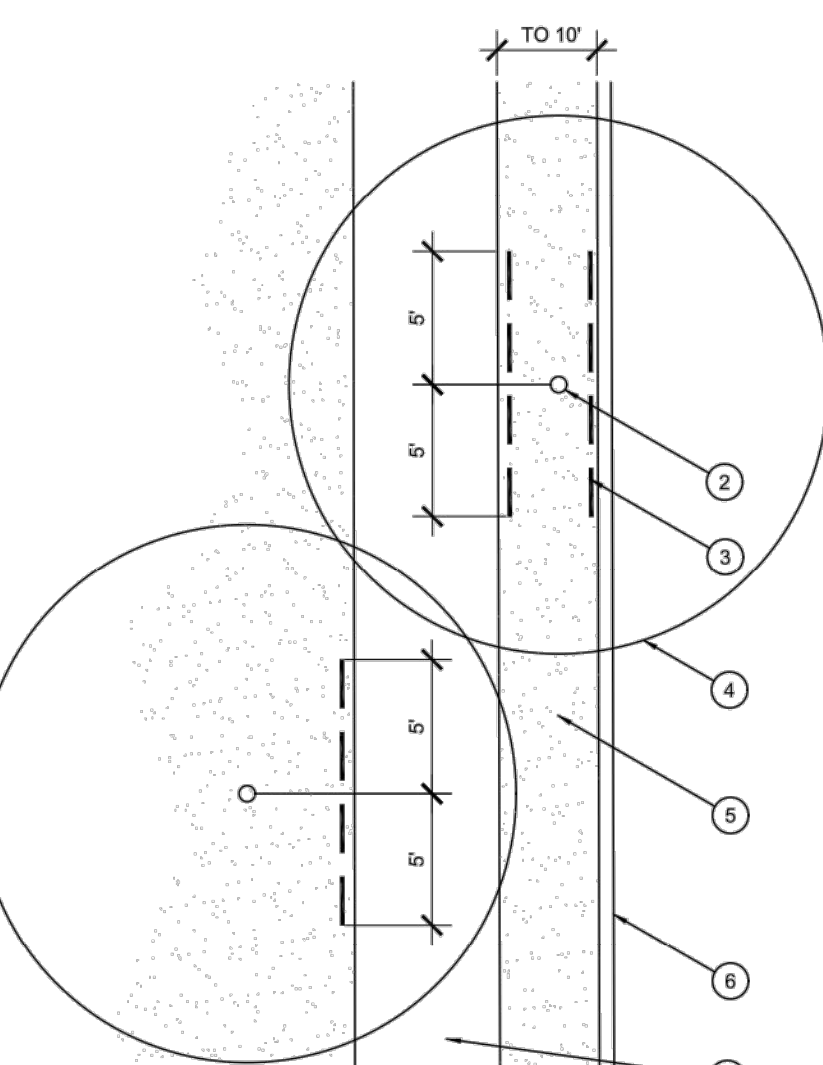
- A. SOIL PREPARATION
 1. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE GRADE OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1" OF FINISH GRADE. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST.
 2. SOIL TESTING
 - a. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, CONTRACTOR SHALL HAVE SOIL SAMPLES FROM THE PROJECT'S LANDSCAPE AREAS TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY. EACH SAMPLE SUBMITTED TO THE LAB SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL, TAKEN FROM BETWEEN THE SOIL SURFACE AND 6" DEPTH. IF NO SAMPLE LOCATIONS ARE INDICATED ON THE PLANS, THE CONTRACTOR SHALL TAKE A MINIMUM OF THREE SAMPLES FROM VARIOUS REPRESENTATIVE LOCATIONS FOR TESTING.
 - b. THE CONTRACTOR SHALL HAVE THE SOIL TESTING LABORATORY PROVIDE RESULTS FOR THE FOLLOWING: SOIL TEXTURAL CLASS, GENERAL SOIL FERTILITY, pH, ORGANIC MATTER CONTENT, SALT (CEC), LIME, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT.
 - c. THE CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES.
 - d. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): SEPARATE SOIL PREPARATION AND BACKFILL MIX RECOMMENDATIONS FOR GENERAL ORNAMENTAL PLANTS, XERIC PLANTS, TURF, AND NATIVE SEED, AS WELL AS PRE-PLANT FERTILIZER APPLICATIONS AND RECOMMENDATIONS FOR ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
 - e. THE CONTRACTOR SHALL INSTALL SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT RECOMMENDATIONS. ANY CHANGE IN COST DUE TO THE SOIL REPORT RECOMMENDATIONS, EITHER INCREASE OR DECREASE, SHALL BE SUBMITTED TO THE OWNER WITH THE REPORT.
 - f. FOR BIDDING PURPOSES ONLY, THE SOIL PREPARATION SHALL CONSIST OF THE FOLLOWING:
 1. TURF: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING.
 - i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
 - ii. PREPLANT TURF FERTILIZER (10-20-10 OR SIMILAR, SLOW RELEASE, ORGANIC) - 15 LBS PER 1,000 S.F.
 - iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
 2. TREES, SHRUBS, AND PERENNIALS: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 6" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING.
 - i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
 - ii. 12-12-12 FERTILIZER (OR SIMILAR, ORGANIC, SLOW RELEASE) - 10 LBS PER CU. YD.
 - iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
 - iv. IRON SULPHATE - 2 LBS. PER CU. YD.
 3. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
 - a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1" OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
 - b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADDED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
 - c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (BASED ON A SOIL TEST PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
 - d. ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 3" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
 - e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
 - f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
 - g. ONCE SOIL PREPARATION IS COMPLETE, THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT THERE ARE NO DEBRIS, TRASH, OR STONES LARGER THAN 1" REMAINING IN THE TOP 6" OF SOIL.

- B. SUBMITTALS
 1. THE CONTRACTOR SHALL PROVIDE SUBMITTALS AND SAMPLES, IF REQUIRED, TO THE LANDSCAPE ARCHITECT, AND RECEIVE APPROVAL IN WRITING FOR SUCH SUBMITTALS BEFORE WORK COMMENCES.
 2. SUBMITTALS SHALL INCLUDE PHOTOS OF PLANTS WITH A RULER OR MEASURING STICK FOR SCALE. PHOTOS OR SAMPLES OF ANY REQUIRED MULCHES, AND SOIL AMENDMENT RECOMMENDATIONS FROM THE TESTING LAB (INCLUDING COMPOST AND FERTILIZER RATES AND TYPES, AND OTHER AMENDMENTS FOR TREE/SHRUB, TURF, AND SEED AREAS AS MAY BE APPROPRIATE).
 3. SUBMITTALS SHALL ALSO INCLUDE MANUFACTURER CUT SHEETS FOR PLANTING ACCESSORIES SUCH AS TREE STAKES AND TIES, EDGING, AND LANDSCAPE FABRICS (IF ANY).
 4. WHERE MULTIPLE ITEMS ARE SHOWN ON A PAGE, THE CONTRACTOR SHALL CLEARLY INDICATE THE ITEM BEING CONSIDERED.
- C. GENERAL PLANTING
 1. REMOVE ALL NURSERY TAGS AND STAKES FROM PLANTS.
 2. EXCEPT IN AREAS TO BE PLANTED WITH ORNAMENTAL GRASSES, APPLY PRE-EMERGENT HERBICIDES AT THE MANUFACTURER'S RECOMMENDED RATE.
 3. TRENCHING NEAR EXISTING TREES:
 - a. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHING. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK WITH A RADIUS EQUAL TO 1" FOR EVERY 1" OF TRUNK DIAMETER AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
 - b. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
 - c. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER. WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
 - d. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.
- D. TREE PLANTING
 1. TREES PLANTING HOLES SHALL BE EXCAVATED TO MINIMUM WIDTH OF TWO TIMES THE WIDTH OF THE ROOTBALL, AND TO A DEPTH EQUAL TO THE DEPTH OF THE ROOTBALL LESS TWO TO FOUR INCHES.
 2. SCARIFY THE SIDES AND BOTTOM OF THE PLANTING HOLE PRIOR TO THE PLACEMENT OF THE TREE. REMOVE ANY GLAZING THAT MAY HAVE BEEN CALIBERED DURING THE EXCAVATION OF THE HOLE.
 3. FOR CONTAINER AND BOX TREES, TO REMOVE ANY POTENTIALLY GIRDLING ROOTS AND OTHER ROOT DEFECTS, THE CONTRACTOR SHALL SHAVE A 1" LAYER OFF OF THE SIDES AND BOTTOM OF THE ROOTBALL OF ALL TREES JUST BEFORE PLACING INTO THE PLANTING PIT. DO NOT "TEAR" TREE ROOTS OUT OF THE SOIL.
 4. INSTALL THE TREE ON UNDISTURBED SUBGRADE SO THAT THE TOP OF THE ROOTBALL IS TWO TO FOUR INCHES ABOVE THE SURROUNDING GRADE.
 5. BACKFILL THE TREE HOLE UTILIZING THE EXISTING TOPSOIL FROM ON-SITE. ROCKS LARGER THAN 1" DIA. AND ALL OTHER DEBRIS SHALL BE REMOVED FROM THE SOIL PRIOR TO THE BACKFILL. SHOULD ADDITIONAL SOIL BE REQUIRED TO ACCOMPLISH THIS TASK, USE STORED TOPSOIL FROM ON-SITE OR IMPORT ADDITIONAL TOPSOIL FROM OFF-SITE AT NO ADDITIONAL COST TO THE OWNER. IMPORTED TOPSOIL SHALL BE OF THE SAME TYPE AND COMPOSITION IN THE ON-SITE SOIL.
 6. TREES SHALL NOT BE STAKED UNLESS LOCAL CONDITIONS (SUCH AS HEAVY WINDS OR SLOPES) REQUIRE STAKES TO KEEP TREES UPRIGHT. SHOULD STAKING BE REQUIRED, THE TOTAL NUMBER OF TREE STAKES (BEYOND THE MINIMUMS LISTED BELOW) WILL BE LEFT TO THE LANDSCAPE CONTRACTOR. SHOULD ANY TREES FALL OR LEAN, THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN THE TREE, OR REPLACE IT SHOULD IT BECOME DAMAGED. TREE STAKING SHALL ADHERE TO THE FOLLOWING GUIDELINES:
 - a. 1"-2" TREES TWO STAKES PER TREE
 - b. 2"-12" TREES THREE STAKES PER TREE
 - c. TREES OVER 4" CALIPER GUY AS NEEDED
 - d. MULTI-TRUNK TREES THREE STAKES PER TREE MINIMUM. QUANTITY AND POSITIONS AS NEEDED TO STABILIZE THE TREE UPON COMPLETION OF PLANTING. CONSTRUCT AN EARTH WATERING BASIN AROUND THE TREE. COVER THE INTERIOR OF THE TREE RING WITH MULCH (TYPE AND DEPTH PER PLANS).
 7. SHRUB, PERENNIAL, AND GROUNDCOVER PLANTING
 1. DID THE PLANTING HOLES TWICE AS WIDE AND 2" LESS DEEP THAN EACH PLANT'S ROOTBALL. INSTALL THE PLANT IN THE HOLE. BACKFILL AROUND THE PLANT WITH SOIL AMENDED PER SOIL TEST RECOMMENDATIONS.
 2. WHEN PLANTING IS COMPLETE, INSTALL MULCH (TYPE AND DEPTH PER PLANS) OVER ALL PLANTING BEDS, COVERING THE ENTIRE PLANTING AREA.
- E. SOODING
 1. SOD VARIETY TO BE AS SPECIFIED ON THE LANDSCAPE PLAN.
 2. LAY SOD WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT LAY IF THE GROUND IS FROZEN.
 3. LAY THE SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS - DO NOT OVERLAP. STRIP STRIPS TO OFFSET JOINTS IN ADJACENT COURSES.
 4. ROLL THE SOD TO ENSURE GOOD CONTACT OF THE SOD'S ROOT SYSTEM WITH THE SOIL UNDERNEATH.
 5. WATER THE SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING TO OBTAIN AT LEAST SIX INCHES OF PENETRATION INTO THE SOIL BELOW THE SOD.
- F. MULCH
 1. INSTALL MULCH TOPDRESSING, TYPE AND DEPTH PER MULCH NOTE, IN ALL PLANTING AREAS AND TREE RINGS.
 2. DO NOT INSTALL MULCH WITHIN 6" OF TREE ROOT FLARE AND WITHIN 24" OF HABITABLE STRUCTURES, EXCEPT AS MAY BE NOTED ON THESE PLANS. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS SHALL NOT PROTRUDE ABOVE THE FINISH SURFACE OF THE WALKS AND CURBS. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 1" LOWER THAN THE TOP OF WALL.
- G. CLEAN UP
 1. DURING LANDSCAPE PREPARATION AND PLANTING, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
 2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.
- H. INSPECTION AND ACCEPTANCE
 1. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
 2. WHEN THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
 3. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.
- I. LANDSCAPE MAINTENANCE
 1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTING OF PLANTS THAT HAVE SETTLED, MOVING AND AERATION OF LAWN, WEEDING, TREATING FOR INSECTS AND DISEASES, REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FALL TY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
 2. SHOULD SEEDS AND/OR SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF PLANTS AT NO ADDITIONAL COST TO THE OWNER.
 3. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
 - a. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.
 - b. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
 - c. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. HYDROMULCHED AREAS SHALL SHOW ACTIVE, HEALTHY GROWTH. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESEEDS OR RESEEDS (AS APPROPRIATE) PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.
 4. WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS
 - a. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, SEEDS, HYDROMULCHED AREAS, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
 - b. AFTER THE INITIAL MAINTENANCE PERIOD AND BEING THE GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CANNOT BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.
 5. PROVIDE A MINIMUM OF (2) COPIES OF RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.

- 1 ROLLED-TOP STEEL EDGING PER PLANS.
- 2 TAPERED STEEL STAKES.
- 3 MULCH, TYPE AND DEPTH PER PLANS.
- 4 FINISH GRADE.

D STEEL EDGING
SCALE: NOT TO SCALE

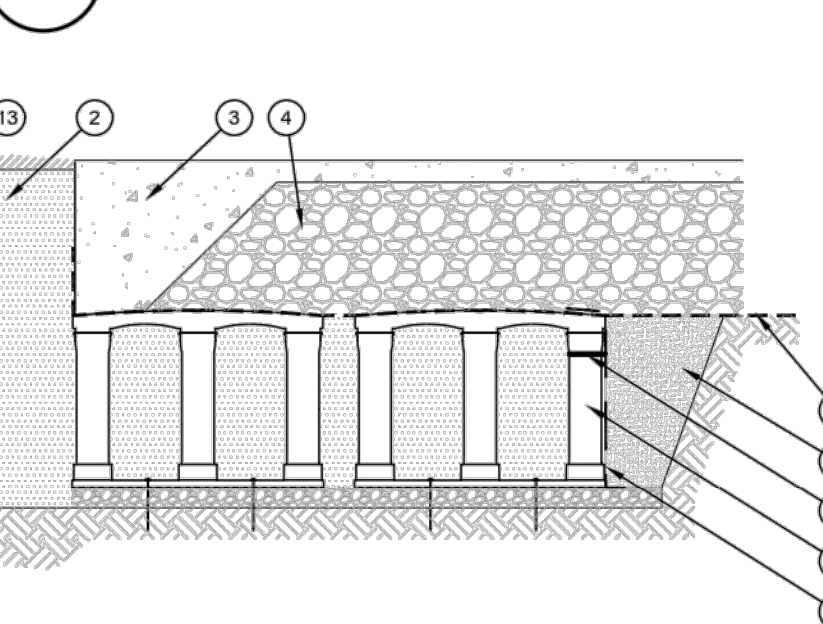
E OPEN LANDSCAPE
SCALE: NOT TO SCALE



- 1 TYPICAL WALKWAY OR PAVING
- 2 TREE TRUNK
- 3 LINEAR ROOT BARRIER MATERIAL. SEE PLANTING NOTES FOR TYPE AND MANUFACTURER. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
- 4 TREE CANOPY
- 5 TYPICAL PLANTING AREA
- 6 TYPICAL CURB AND GUTTER

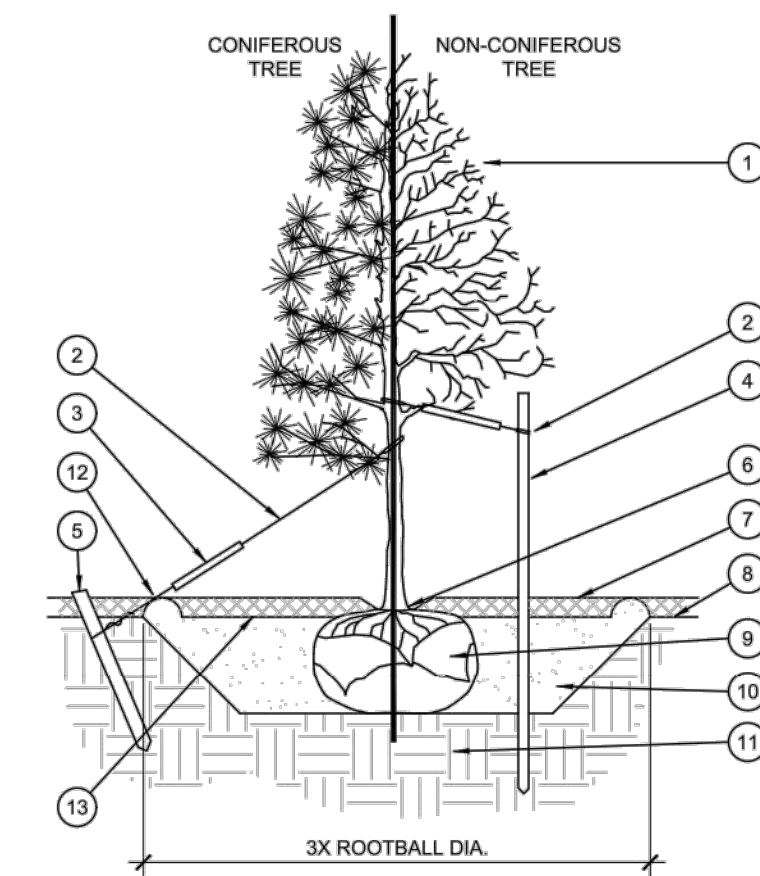
- NOTES:
1. INSTALL ROOT BARRIERS NEAR ALL NEWLY PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS.
 2. BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.

E ROOT BARRIER - PLAN VIEW
SCALE: NOT TO SCALE



- 1 SHRUB, PERENNIAL, OR ORNAMENTAL GRASS.
- 2 MULCH, TYPE AND DEPTH PER PLANS. PLACE NO MORE THAN 1" OF MULCH WITHIN 6" OF PLANT CENTER.
- 3 FINISH GRADE.
- 4 ROOT BALL.
- 5 BACKFILL, AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
- 6 UNDISTURBED NATIVE SOIL.
- 7 3" HIGH EARTHEN WATERING BASIN.
- 8 CONCRETE CURB PER CIVIL ENGINEER, WITH CONCRETE EXTENDING TO TOP OF SILVACELL.
- 9 PLANTER AREA - AMENDED PER SOIL TEST (SEE PLANTING SPECIFICATIONS) - EXCAVATE AND AMEND TO BOTTOM OF SILVACELLS, AND A MINIMUM OF 18" FROM ALL PAVING EDGES WHERE SILVA CELLS OCCUR.
- 10 CONCRETE PAVEMENT PER CIVIL ENGINEER - THICKENED EDGE AT PLANTER AREA, WITH CONCRETE EXTENDING TO TOP OF SILVACELL.
- 11 GRAVEL BASE FOR PAVING PER CIVIL ENGINEER, 12" MIN. DEPTH.
- 12 GEOTEXTILE, ANY APPROVED, 18" MIN. OVERLAP PAST EXCAVATION AND 18" MIN. VERTICAL OVERLAP AT CURB AND PAVING EDGES.
- 13 BACKFILL PER PROJECT SPECIFICATIONS - COMPACT AS REQUIRED.
- 14 CABLE TIE, ATTACHING GEOGRID TO SILVA CELL LEG.
- 15 SILVA CELL SYSTEM (DECK, BASE, AND POSTS) - ASSEMBLE PER MANUFACTURER, APPROXIMATE LAYOUT PER PLAN, SECURE TO UNDISTURBED GRADE PER MANUFACTURER.
- 16 GEOTEXTILE, ANY APPROVED, ATTACH TO CELL FRAMES WITH CABLE TIES - OMIT WHERE ADJACENT TO TREE.
- 17 NATIVE SOIL BACKFILL, AMENDED PER PLANTING PLAN - DO NOT COMPACT (WALKING ON SOIL IS ACCEPTABLE).
- 18 TREE ROOT BALL.
- 19 TREE STAKING SYSTEM PER DETAILS.
- 20 UNDISTURBED NATIVE SOIL PEDESTAL - TOP OF PEDESTAL SHALL BE SUCH THAT TOP OF TREE ROOT BALL IS 2"-4" ABOVE FINISH GRADE (NOT TOP OF MULCH).
- 21 FINISH GRADE.
- 22 TOP OF MULCH.

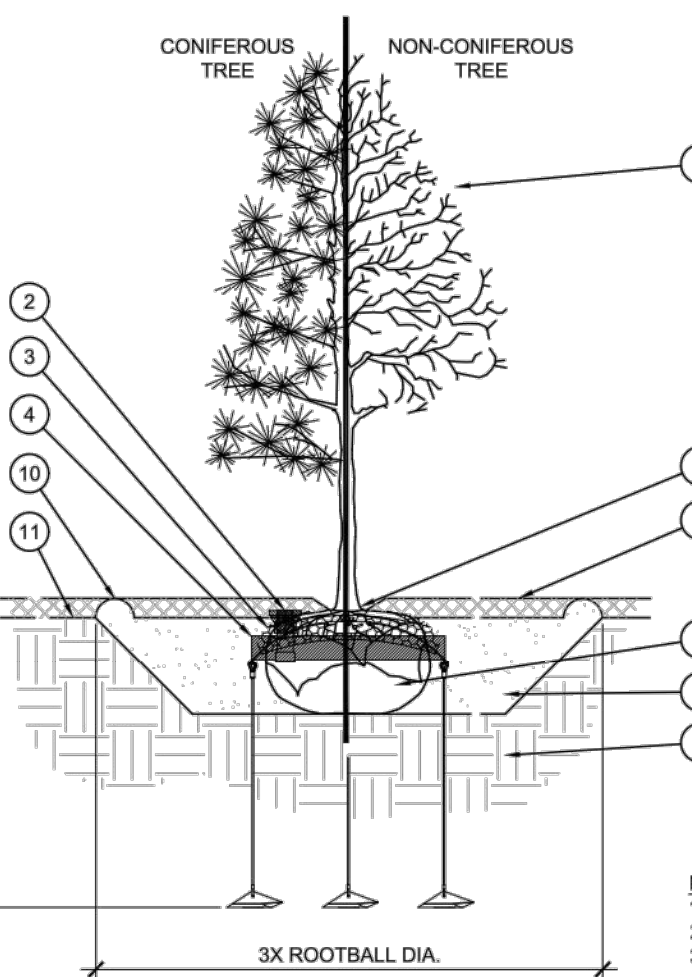
F SILVA CELL FOR TREE PLANTING
SCALE: NOT TO SCALE



- 1 TREE CANOPY.
- 2 CINCH-TIES (2" BOX" CAL. TREES AND SMALLER) OR 12 GAUGE GALVANIZED WIRE WITH NYLON TREE STRAPS AT TREE AND STAKE (3" BOX/2.5" CAL. TREES AND LARGER). SECURE TIES OR STRAPS TO TRUNK JUST ABOVE LOWEST MAJOR BRANCHES.
- 3 24" X 34" P.V.C. MARKERS OVER WIRES.
- 4 GREEN STEEL T-POSTS. EXTEND POSTS 12" MIN. INTO UNDISTURBED SOIL.
- 5 PRESSURE-TREATED WOOD DEADMAN, TWO PER TREE (MIN.). BURY OUTSIDE OF PLANTING PIT AND 18" MIN. INTO UNDISTURBED SOIL.
- 6 TRUNK FLARE.
- 7 MULCH, TYPE AND DEPTH PER PLANS. DO NOT PLACE MULCH WITHIN 6" OF TRUNK.
- 8 FINISH GRADE.
- 9 ROOT BALL.
- 10 BACKFILL, AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
- 11 UNDISTURBED NATIVE SOIL.
- 12 4" HIGH EARTHEN WATERING BASIN.
- 13 FINISH GRADE.

- NOTES:
1. SCARIFY SIDES OF PLANTING PIT PRIOR TO SETTING TREE.
 2. REMOVE EXCESS SOIL APPLIED ON TOP OF THE ROOTBALL THAT COVERS THE ROOT FLARE. THE PLANTING HOLE DEPTH SHALL BE SUCH THAT THE ROOTBALL RESTS ON UNDISTURBED SOIL, AND THE ROOT FLARE IS 2"-4" ABOVE FINISH GRADE.
 3. FOR B&B TREES, CUT OFF BOTTOM 1/3 OF WIRE BASKET BEFORE PLACING TREE IN HOLE. CUT OFF AND REMOVE REMAINDER OF BASKET AFTER TREE IS SET IN HOLE. REMOVE ALL NYLON TIES, TWINE, ROPE, AND OTHER PACKING MATERIAL. REMOVE AS MUCH BURLAP FROM AROUND ROOTBALL AS IS PRACTICAL.
 4. REMOVE ALL NURSERY STAKES AFTER PLANTING.
 5. FOR TREES 3" BOX/2.5" CAL. AND LARGER, USE THREE STAKES OR DEADMEN (AS APPROPRIATE), SPACED EVENLY AROUND TREE.
 6. STAKING SHALL BE TIGHT ENOUGH TO PREVENT TRUNK FROM BENDING, BUT LOOSE ENOUGH TO ALLOW SOME TRUNK MOVEMENT IN WIND.

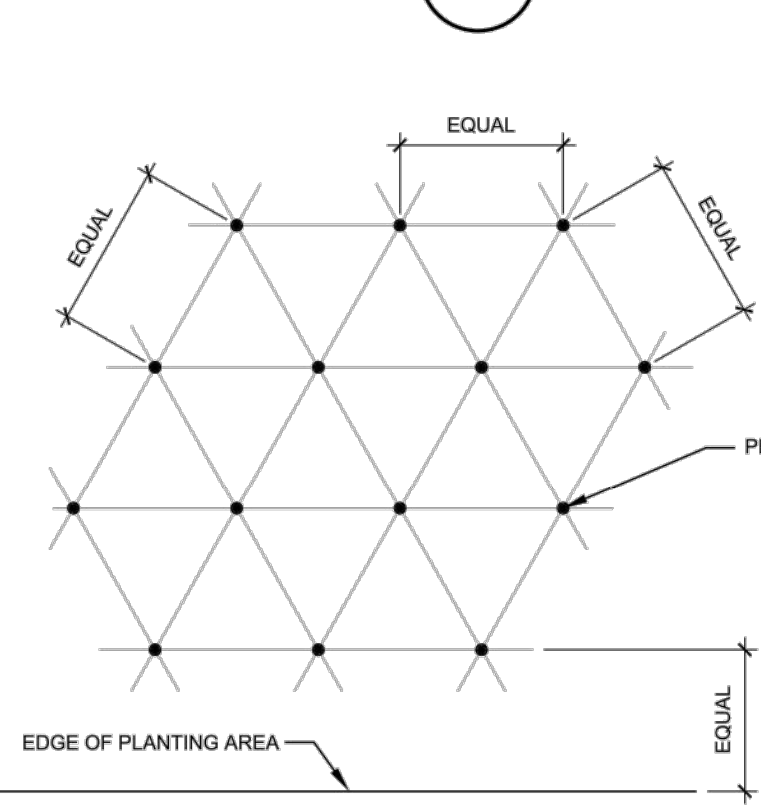
A TREE PLANTING
SCALE: NOT TO SCALE



- 1 TREE CANOPY.
- 2 "PLATIPUS" ALUMINUM CAP, MODEL PIDCAPALU
- 3 "PLATIPUS" RFP ROOTBALL FIXING SYSTEM - PLATH-MAT
- 4 PID1-TR IRRIGATION SYSTEM, 1" X 30CM (12") HEADER, BASE AND DEBRIS CAP
- 5 TRUNK FLARE.
- 6 MULCH, TYPE AND DEPTH PER PLANS. DO NOT PLACE MULCH WITHIN 6" OF TRUNK.
- 7 ROOT BALL, B&B
- 8 BACKFILL, AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
- 9 UNDISTURBED NATIVE SOIL.
- 10 4" HIGH EARTHEN WATERING BASIN.
- 11 FINISH GRADE.

- NOTES:
1. INSTALL PLATIPUS SYSTEM PER MANUFACTURER.
 2. SCARIFY SIDES OF PLANTING PIT PRIOR TO SETTING TREE.
 3. FOR B&B TREES, CUT OFF BOTTOM 1/3 OF WIRE BASKET BEFORE PLACING TREE IN HOLE. CUT OFF AND REMOVE REMAINDER OF BASKET AFTER TREE IS SET IN HOLE. REMOVE ALL NYLON TIES, TWINE, ROPE, AND OTHER PACKING MATERIAL. REMOVE AS MUCH BURLAP FROM AROUND ROOTBALL AS IS PRACTICAL.
 4. REMOVE EXCESS SOIL APPLIED ON TOP OF THE ROOTBALL THAT COVERS THE ROOT FLARE. THE PLANTING HOLE DEPTH SHALL BE SUCH THAT THE ROOTBALL RESTS ON UNDISTURBED SOIL, AND THE ROOT FLARE IS 2"-4" ABOVE FINISH GRADE.
 5. REMOVE ALL NURSERY STAKES AFTER PLANTING.

B TREE PLANTING ADJACENT TO SILVA CELLS
SCALE: NOT TO SCALE



NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT WHERE SHOWN ON PLANS AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

- 1) STEP 1: DETERMINE TOTAL PLANTS FOR THE AREA WITH THE FOLLOWING FORMULA:
TOTAL AREA / AREA DIVIDER = TOTAL PLANTS
- | PLANT SPACING | AREA DIVIDER | PLANT SPACING | AREA DIVIDER |
|---------------|--------------|---------------|--------------|
| 6" | 0.22 | 18" | 1.56 |
| 8" | 0.39 | 24" | 3.46 |
| 10" | 0.60 | 30" | 5.41 |
| 12" | 0.87 | 36" | 7.79 |
| 15" | 1.35 | | |
- 2) STEP 2: SUBTRACT THE ROW (S) OF PLANTS THAT WOULD OCCUR AT THE EDGE OF THE PLANTED AREA WITH THE FOLLOWING FORMULA: TOTAL PERIMETER LENGTH / PLANT SPACING = TOTAL PLANT SUBTRACTION
- EXAMPLE: PLANTS AT 18" O.C. IN 100 SF PLANTING AREA, 40 LF PERIMETER
STEP 1: 100 SF / 1.95 = 51 PLANTS
STEP 2: 51 PLANTS - (40 LF / 1.95 = 21 PLANTS) = 30 PLANTS TOTAL

C PLANT SPACING
SCALE: NTS

G SHRUB AND PERENNIAL PLANTING
SCALE: NTS



- 1 SHRUB, PERENNIAL, OR ORNAMENTAL GRASS.
- 2 MULCH, TYPE AND DEPTH PER PLANS. PLACE NO MORE THAN 1" OF MULCH WITHIN 6" OF PLANT CENTER.
- 3 FINISH GRADE.
- 4 ROOT BALL.
- 5 BACKFILL, AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
- 6 UNDISTURBED NATIVE SOIL.
- 7 3" HIGH EARTHEN WATERING BASIN.

LOWRY
ENGINEERING
1111 WESTRAC DRIVE - SUITE 108
FARGO, NORTH DAKOTA 58103

REVISIONS

11-05-21 - CITY & FRUITLAND MUTUAL WATER COMMENTS	
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PUYALLUP, WA 98373

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LE JOB # 18009.1
PROJECT DATE: 11/05/2021
CHECKED BY: LML/RM
DRAWN BY: LML
APPROVED BY: LML

SHEET: 23 OF 23

PLANTING SPECIFICATIONS AND DETAILS

LP-2

11/4/2021

APPROVED FINAL LANDSCAPE PLAN

BY: _____
PLANNING DIVISION

DATE: _____

NOTE: THIS APPROVAL IS VOID AFTER 1 YEAR FROM APPROVAL DATE.

THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.

FIELD CONDITIONS MAY DICTATE CHANGES TO THE PLANS AS DETERMINED BY THE PLANNING DIRECTOR, DESIGNER OR PROJECT PLANNER.

STATE OF WASHINGTON
LICENSED LANDSCAPE ARCHITECT
Lawrence M. Lesser
LICENSE NO. 1053
EXPIRES ON 08/23/2023