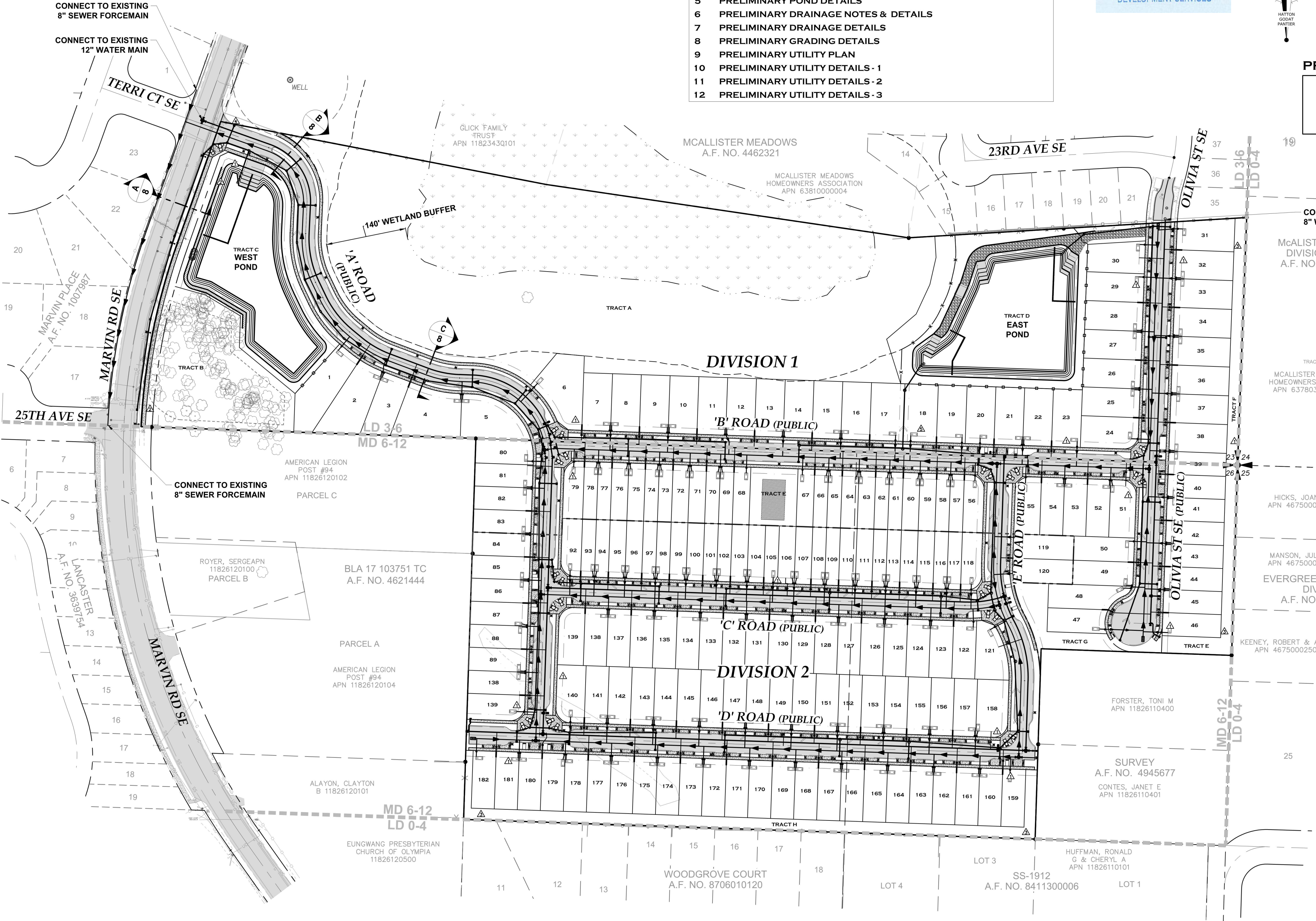


# THE ENCLAVE AT OAK TREE

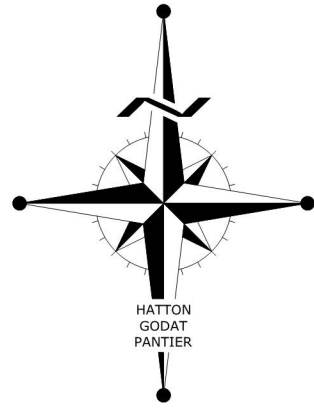
LACEY, WA



## SHEET INDEX

- 1 PRELIMINARY COVER SHEET
- 2 PRELIMINARY EROSION & SEDIMENT CONTROL PLAN
- 3 PRELIMINARY EROSION CONTROL NOTES & DETAILS
- 4 PRELIMINARY GRADING & DRAINAGE PLAN
- 5 PRELIMINARY POND DETAILS
- 6 PRELIMINARY DRAINAGE NOTES & DETAILS
- 7 PRELIMINARY DRAINAGE DETAILS
- 8 PRELIMINARY GRADING DETAILS
- 9 PRELIMINARY UTILITY PLAN
- 10 PRELIMINARY UTILITY DETAILS - 1
- 11 PRELIMINARY UTILITY DETAILS - 2
- 12 PRELIMINARY UTILITY DETAILS - 3

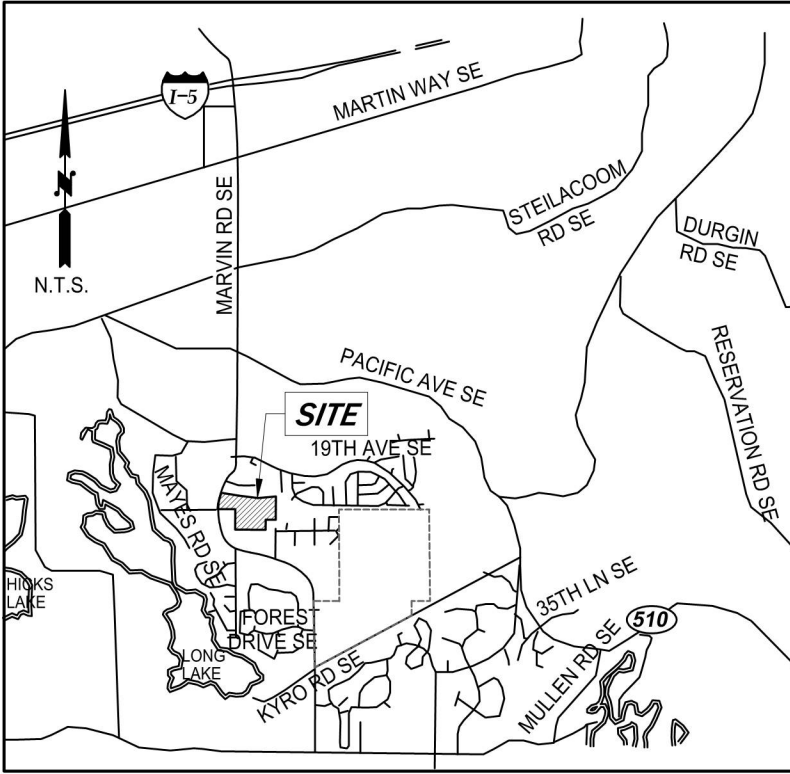
THURSTON COUNTY  
RECEIVED  
JUL 11 2023  
DEVELOPMENT SERVICES



CITY OF LACEY	
<b>VERTICAL DATUM</b> THURSTON COUNTY PHOTOGRAMMETRY	<b>MERIDIAN HORIZONTAL DATUM</b> CITY OF LACEY COORDINATE SYSTEM AND SURVEY RECORDED UNDER AUDITOR'S NO 3111152, BASED ON THE NORTH LINE OF THE NW 1/4 OF SECTION 8, TOWNSHIP 18 NORTH, RANGE 1 WEST, W.M. EQUALS NORTH 88°02'08" WEST
SCALE: 1" = 100'	

## PROJECT PROPONENT

DR HORTON  
CONTACT: RAELEYN HULQUIST  
11241 SLATER AVENUE NE, SUITE 200  
KIRKLAND, WA 98033  
(425) 736-1638  
RHULQUIST@DRHORTON.COM



## VICINITY MAP SITE DATA

ASSESSOR'S PARCEL NO.'S ZONING	11823430100, 11826110000, 11826110300 MD, MODERATE-DENSITY RESIDENTIAL LD 3-6, LOW-DENSITY RESIDENTIAL
TOTAL AREA	36.22 ACRES
WETLANDS	2.56 ACRES
BUFFERS	2.95 ACRES
OAK TREES	0.93 ACRES
NET AREA	29.78 ACRES
LENGTH OF ROADS	5,284 L.F.
AREA OF ROADS	6.93 ACRES
TOTAL LOTS	182
DENSITY	6.11 DU/AC (OVERALL)
TOTAL OPEN SPACE	12.63 ACRES (34.9%)
AREA OF LD ZONE	18.64 ACRES
AREA OF MD ZONE	17.58 ACRES
SMALLEST LOT AREA LD 3-6	5,000 SF
SMALLEST LOT AREA MD 3-6	4,000 SF (STANDARD)
SMALLEST LOT AREA MD 6-12	2,400 SF (TOWNHOME)
AVERAGE LOT AREA	4,385 SF (EXCLUDING TOWNHOMES)
WATER	CITY OF LACEY
SEWER	CITY OF LACEY
DENSITY CALCULATIONS	
LD 3-6 ZONE	
TOTAL AREA	18.64 ACRES
WETLANDS	2.56 ACRES
BUFFERS	2.95 ACRES
OAK TREES	0.93 ACRES
NET AREA	11.95 ACRES
NO. OF LOTS	38
DENSITY	3.18 DU/ACRE
MD 6-12 ZONE	
TOTAL AREA	17.58 ACRES
WETLANDS	0 ACRES
BUFFERS	0 ACRES
NET AREA	17.58 ACRES
NO. OF LOTS	144 TOTAL
NO. OF TOWNHOMES	51 (34%)
DENSITY	8.19 DU/ACRE

## LEGEND

EX. OAK TREE	NEW PEDESTRIAN LIGHT
EX. HYDRANT	NEW HYDRANT ASSEMBLY
EX. WATER METER	NEW SINGLE WATER METER
EX. WATER VALVE	NEW DOUBLE WATER METER
EX. IRRIGATION METER	NEW WATER VALVE
EX. CATCH BASIN	NEW IRRIGATION METER
EX. SEWER MANHOLE	NEW TYPE 2 CATCH BASIN
EX. SEWER CLEANOUT	NEW TYPE 1 CATCH BASIN
EX. SEWER VALVE	NEW PIG LAUNCH PORT
EX. GRAVITY SEWER	NEW SEWER FORCEMAIN
EX. FORCEMAIN	NEW STORM DRAIN LINE
EX. STORM/ROOF LINE	NEW ROOF DRAIN LINE
EX. WATER LINE	NEW WATERMAIN
EX. EDGE OF PAVEMENT	NEW WATER SERVICE
EX. WETLAND	

EXISTING WELL	(INFORMATION PROVIDED BY THURSTON COUNTY)
PLANNED 10' WIDE UTILITY EASEMENT	
PLANNED 19' RIGHT OF WAY DEDICATION	
MODIFIED INCOMPATIBLE USE BUFFER PURSUANT TO CHAPTER 21.80.055TCC (SEE HEARING EXAMINER DECISION FOR EMMERSON CROSSING CASE NO. 2016106141)	
ADDITIONAL RIGHT OF WAY DEDICATION BY OTHERS	
PLANNED STORM DRAINAGE EASEMENT	

**TOPOGRAPHIC NOTE:**  
THE EXISTING TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, HGP CANNOT ENSURE ITS ACCURACY AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

**NOTE:** THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT, UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

### CONSTRUCTION STAKING:

THIS PROJECT MUST BE STAKED PRIOR TO CONSTRUCTION BY THE DESIGN ENGINEER OR A LICENSED LAND SURVEYOR.

### RECORD DOCUMENTS:

THE CONTRACTOR SHALL FURNISH HATTON GODAT PANTIER WITH A DRAWING(S) SHOWING THE CHANGES MADE TO THE DESIGN DRAWING(S).

DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H 1" = 100'  
V N/A



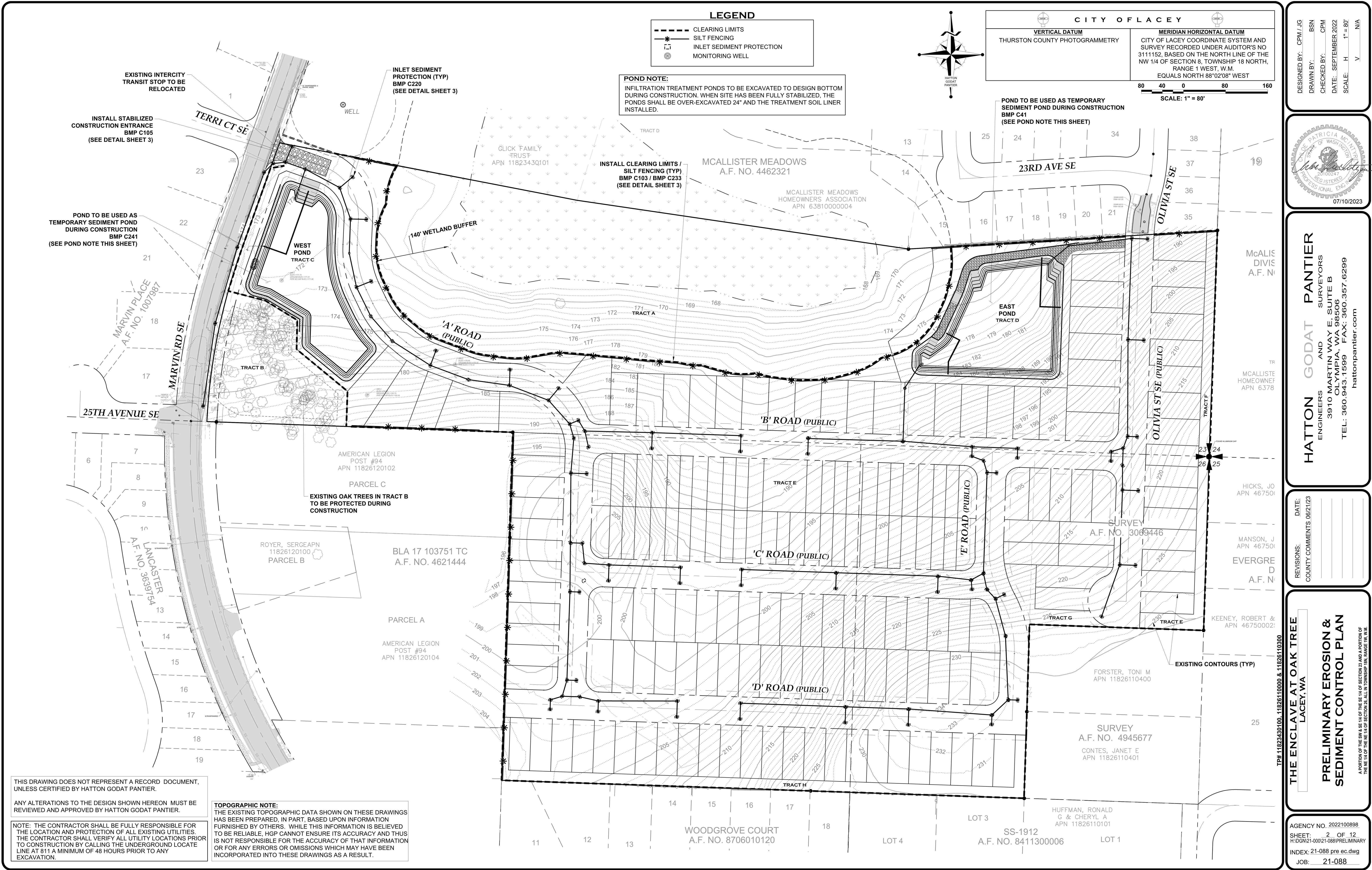
**HATTON GODAT PANTIER**  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E, SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
hatterpantier.com

REVIEWS: DATE: 06/21/23  
COUNTY COMMENTS

THE ENCLAVE AT OAK TREE  
LACEY, WA  
PRELIMINARY COVER SHEET

AGENCY NO. 2022100898  
SHEET: 1 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX: 21-088 pre cov.dwg  
JOB: 21-088







1. ACCEPTANCE OF THIS SWPPP BY THURSTON COUNTY DOES NOT CONSTITUTE AN ACCEPTANCE OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).

- MAINTENANCE OF EROSION CONTROL FACILITIES:

IN GENERAL, ALL BMP'S SHALL BE CHECKED WEEKLY AND AFTER A SIGNIFICANT RAINFALL (MORE THAN APPROXIMATELY 0.5 INCHES IN 24 HOURS). THE FOLLOWING ITEMS SHALL BE CHECKED IN PARTICULAR:

1. SEDIMENT BASINS SHALL BE CLEANED OUT WHEN THE LEVEL OF SEDIMENT REACHES 1-1/2- FEET FROM THE TOP OF THE RISER PIPE.
2. GRAVEL AROUND THE RISER PIPE SHALL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WOULD RESTRICT DRAINAGE. IF THE GRAVEL BECOMES CLOGGED WITH SILT, IT SHALL BE REPLACED.
3. DIVERSION DIKES AND SWALES SHALL BE CHECKED FOR BLOCKAGE AND DAMAGE ON A REGULAR BASIS. WATER SHALL MOVE FREELY BEHIND DIKES AND IN SWALES AT ALL TIMES.
4. PIPE SLOPE DRAINS SHALL BE CHECKED FOR STABILITY. NO UNDERMINING OF THE PIPE SHALL BE ALLOWED.
5. FILTER FENCE SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP. SEDIMENT SHALL BE REMOVED ONCE IT REACHES A DEPTH OF 1-FOOT.
6. EROSION CONTROL BLANKETS SHALL BE CHECKED FOR STABILITY. BLANKETS SHALL BE HELD IN PLACE AND HAVE GOOD CONTACT WITH THE FILL SOIL AT ALL TIMES.
7. ALL SEEDED AND SODDED AREAS, ESPECIALLY FILL SLOPES, SHALL BE CHECKED REGULARLY TO MAKE SURE VEGETATIVE COVERAGE IS COMPLETE. AREAS SHALL BE RESEEDED AND FERTILIZED AS NEEDED.
8. TRACKING OF MUD OFF-SITE SHALL NOT BE ALLOWED. IF EXCESSIVE MUD IS TRACKED OFF SITE, IT WILL BE CLEANED WITH A STREET SWEEPER. FURTHER TRACKING SHALL THEN BE PREVENTED BY WASHING TRUCK TIRES OR SWEEPING CONTINUOUSLY.

1. CONSTRUCTION ON THIS SITE SHALL BE CONDUCTED SUBSTANTIALLY IN ACCORDANCE WITH THE APPROVED PLANS. DEVIATIONS FROM THESE PLANS SHALL BE SUBMITTED TO THE PROJECT ENGINEER AND REVIEWING AGENCY. DEVIATIONS MUST BE APPROVED PRIOR TO ANY SITE DISTURBING ACTIVITY NOT CONTAINED WITHIN THE APPROVED PLANS.

- A. INSTALL STABILIZED CONSTRUCTION ENTRANCE TO PROVIDE SITE ACCESS AT INDICATED CONSTRUCTION ENTRANCE LOCATION. INSTALL SILT FENCE AS SHOWN IN THESE PLANS.
  - B. INSTALL INLET PROTECTION FOR EXISTING INLETS IN THE VICINITY OF AREAS TO BE DISTURBED AS INDICATED ON PLANS.
  - C. CALL FOR INSPECTION BY THE REVIEWING AGENCY AND PROJECT ENGINEER.
  - D. BEGIN TREE CLEARING AND GRUBBING OF AREAS WHICH ARE TO BE GRADED.
  - E. GRADE TEMPORARY SEDIMENT POND AND PERMANENT DRAINAGE POND TO BE USED AS TEMPORARY SEDIMENT POND DURING CONSTRUCTION IN ACCORDANCE WITH THESE PLANS.
  - F. BEGIN GRADING OF AREA TO SUBGRADE AS SPECIFIED.
  - G. INSTALLATION OF STORM DRAINAGE FACILITIES (I.E., PIPING, CATCH BASINS, AND OTHER UTILITIES.)
  - H. STRUCTURE CONSTRUCTION
  - I. PERMANENT EROSION CONTROL MEASURES (I.E., HYDROSEEDING, GRASSING, PLANTINGS, ETC.)
3. ONCE THE SITE HAS BEEN DISTURBED, CONTINUE OPERATIONS DILIGENTLY TOWARD COMPLETION AND STABILIZATION OF THE SITE.
  4. MONITOR ALL EROSION CONTROL FACILITIES, REPAIR, MODIFY, AND ENHANCE AS DIRECTED OR AS REQUIRED.

1. ANYTIME CONCRETE IS USED THESE MANAGEMENT PRACTICES SHALL BE UTILIZED.
2. CONCRETE PROJECTS INCLUDE BUT ARE NOT LIMITED TO CURBS, SIDEWALKS, ROADS, DRIVEWAYS, BRIDGES, FOUNDATIONS, FLOORS, STREET LIGHT BASES AND UTILITY BLOCKING.
3. CONCRETE EQUIPMENT SHALL BE WASHED OUT ONLY IN FORMED "WASH OUT" AREAS.
4. UNUSED CONCRETE SHALL BE RETURNED TO THE BATCH PLANT FOR RECYCLING.
5. CONCRETE WASHOUT AREAS SHALL BE CHECKED AND REPAIRED DAILY.

1. SAW CUTTING AND SURFACING OPERATIONS GENERATE SLURRY AND PROCESS WATER THAT CONTAIN FINE PARTICULATES AND HIGH PH.
2. ANYTIME SAW CUTTING AND SURFACING OPERATIONS TAKE PLACE, THESE BEST MANAGE PRACTICES SHALL BE UTILIZED.
3. SAW CUTTING AND SURFACING OPERATIONS INCLUDING BUT NOT LIMITED TO CONCRETE SAWING, CORING, GRINDING, ROUGHENING OR HYDRODEMOLITION.
4. SLURRY AND CUTTINGS SHALL BE VACUUMED DURING OPERATIONS.
5. SLURRY AND CUTTINGS SHALL NOT REMAIN EXPOSED TO THE ELEMENTS OVERNIGHT.
6. SLURRY AND CUTTINGS SHALL NOT BE ALLOWED TO DRAIN TO NATURAL OR CONSTRUCTED DRAINAGE CONVEYANCE PATHS.
7. COLLECTED SLURRY AND CUTTINGS SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.
8. WASTE MATERIAL AND DEMOLITION DEBRIS MUST BE HANDLED IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF WATER. IF THE AREA IS SWEEP WITH A MECHANICAL SWEEPER, THE MATERIAL MUST BE HAULED OUT OF THE AREA TO AN APPROVED DISPOSAL SITE.

1. SEED MIXTURE SHALL BE: 40% CHEWINGS OR ANNUAL BLUEGRASS, 50% PERENNIAL RYE, 5% RED TOP OR COLONIAL BENTGRASS AND 5% WHITE DUTCH CLOVER APPLIED AT THE RATE OF 120 POUNDS PER ACRE.

2. SEED BEDS PLANTED BETWEEN MAY 1 AND OCTOBER 31 WILL REQUIRE IRRIGATION AND OTHER MAINTENANCE AS NECESSARY TO FOSTER AND PROTECT THE ROOT STRUCTURE.
3. FOR SEED BEDS PLANTED BETWEEN OCTOBER 31 AND APRIL 30, ARMORING OF THE SEED BED WILL BE NECESSARY (E.G., GEOTEXTILES, JUTE MAT, CLEAR PLASTIC COVERING).
4. BEFORE SEEDING, INSTALL NEEDED SURFACE RUNOFF CONTROL MEASURES SUCH AS GRADIENT TERRACES, INTERCEPTOR DIKES, SWALES, LEVEL SPREADERS AND SEDIMENT BASINS.
5. THE SEEDBED SHALL BE FIRM WITH A FAIRLY FINE SURFACE FOLLOWING SURFACE ROUGHENING. PERFORM ALL CULTURAL OPERATIONS ACROSS OR AT RIGHT ANGLES TO THE SLOPE.
6. FERTILIZERS ARE TO BE USED ACCORDING TO SUPPLIERS RECOMMENDATIONS. AMOUNTS USED SHOULD BE MINIMIZED, ESPECIALLY ADJACENT TO WATER BODIES AND WETLANDS.

1. MULCH MATERIALS USED SHALL BE HAY OR STRAW, AND SHALL BE APPLIED AT THE RATE OF 2 - 3 TONS / ACRE OR OTHER WOOD FIBER CELLULOSE MATERIAL TO BE APPLIED AT THE RATE OF APPROXIMATELY 100 TONS / ACRE.
2. MULCHES SHALL BE APPLIED IN ALL AREAS WITH EXPOSED SOILS.
3. MULCHING SHALL BE USED IMMEDIATELY AFTER SEEDING OR IN AREAS WHICH CANNOT BE SEEDED BECAUSE OF THE SEASON.
4. ALL AREAS NEEDING MULCH SHALL BE COVERED BY NOVEMBER 1.
5. MULCH MUST BE MAINTAINED UNTIL SITE HAS ESTABLISHED 80% GRASS COVERAGE.

1. ALL FILL AREA SLOPES SHALL BE ROUGHENED USING ONE OF THE METHODS FROM BMP C130 AS FILL IS BEING PLACED.
2. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED PER THE NOTES AND DETAILS IN THIS PLAN SET AND PER BMP'S C120 AND C121.
3. IN NO CASE SHALL DISTURBED SOILS REMAIN UNSTABILIZED AND UNWORKED FOR MORE THAN 7 DAYS DURING THE DRY SEASON (MAY 1 TO SEPTEMBER 30) OR MORE THAN 2 DAYS DURING THE WET SEASON (OCTOBER 1 TO APRIL 30)

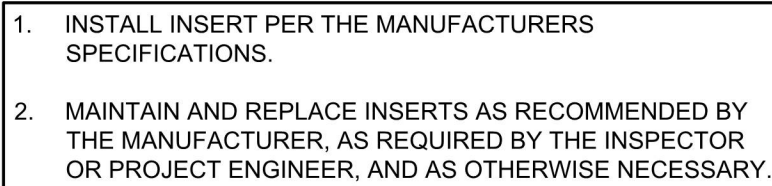
1. ALL Dewatering from open cut excavation, tunneling, foundation work, trenching or underground vaults shall be discharged into a controlled conveyance system prior to discharge to a sediment trap or pond.
2. Channels used for this purpose will be stabilized with erosion blankets, check dams, seeding, sodding, mulching, outlet protection and/or any other means deemed necessary by the project CESC to ensure erosion and sediment control standards are met.
3. Highly turbid dewatering water from soils known or suspected to be contaminated, or from use of construction equipment, will require additional monitoring and treatment for the specific pollutant(s) based on the contamination.
4. When dewatering storm water is being discharged to a water body with a pollutant(s) of concern, the dewatering water must be monitored in accordance with Chapter 6 of the Construction Stormwater Pollution Prevention Plan (SWPPP) for the project.
5. Such monitoring is the responsibility of the contractor.
6. The dewatering must be known to be free of contamination will, at a minimum, trigger BMP's to trap sediment and reduce turbidity.
7. At a minimum, geotextile fabric socks/bags/cells will be used to filter this material prior to its release to a relatively level vegetated area.
8. When not used for dewatering water, after being filtered by a geotextile fabric sock/bag/or cell, should be directed to one of the ponds for infiltration or metered release.

9. OTHER BMP'S TO BE USED FOR SEDIMENT TRAPPING AND TURBIDITY REDUCTION INCLUDE:

- CONCRETE HANDLING BMP C151
- TEMPORARY SEDIMENT POND BMP C241
- USE OF A SEDIMENT BAG WITH OUTFALL TO A VEGETATED SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING
- CONSTRUCTION STORMWATER FILTRATION BMP C251

THE PROJECT CESCL SHOULD DETERMINE WHICH BMP'S ARE MOST APPROPRIATE FOR SPECIFIC DEWATERING USES.

CONSTRUCTION STORMWATER FILTRATION SHOULD ONLY BE USED AS A LAST RESORT WHEN ALL OTHER OPTIONS HAVE BEEN EXHAUSTED AND THE SITE CANNOT MEET TURBIDITY/POLLUTION MONITORING REQUIREMENTS OTHERWISE.



## BMP C220



ALL SLOPES STEEPER THAN 3:1 AND GREATER THAN 5 VERTICAL FEET SHALL BE ROUGHENED TO A DEPTH OF 2 TO 4 INCHES PRIOR TO SEEDING.



BMP C103

THE CONTRACTOR SHALL PERFORM THE FOLLOWING BEFORE THE START OF ANY LOGGING, GRADING, OR CLEARING ON-SITE:

- A. SURVEY / LOCATE THE CLEARING LIMITS AS DELINEATED ON THE APPROVED SITE PLAN AND TREE PROTECTION PLANS.
- B. INSTALL POSTS FOR THE TREE PROTECTION FENCING. (T-BAR METAL POSTS, 6 FEET ON CENTER, INSTALLED AT THE LIMITS OF CLEARING AROUND ANY TREES TO BE PROTECTED.
- C. THE TOP 2 FEET OF THE TREE PROTECTION FENCING POSTS SHALL BE PAINTED BRIGHT PINK OR ORANGE.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT,  
UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE  
REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

DESIGNED BY:	CPM / JG
DRAWN BY:	BSN
CHECKED BY:	CPM
DATE:	SEPTEMBER 2022
SCALE:	H N/A
	V N/A



**HATTON** **GODAT** **PANTIER**  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E., SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
huttonpantier.com

REVISIONS: DATE:  
COUNTY COMMENTS 06/21/23

THE ENCLAVE AT OAK TREE  
LACEY, WA

## PRELIMINARY EROSION CONTROL NOTES & DETAILS

A PORTION OF THE SW & SE 1/4 OF THE SE 1/4 OF SECTION 23 AND A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 26, ALL IN TOWNSHIP 18N, RANGE 1W, W.M.

AGENCY NO. 2022100898  
SHEET: 3 OF 12  
IDGN21-00021-088PRELIMINARY  
INDEX: 21-088 pre ec.dwg  
JOB: 21-088



## EARTHWORK CALCULATIONS

CUT 115,300 CY  
FILL 105,700 CY  
NET (CUT) 9,600 CY

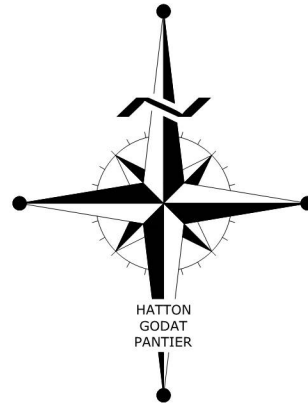
FOR PERMITTING PURPOSES ONLY  
NOT TO BE USED FOR BIDDING

INDICATES LOTS WITH ROOF DRAINS  
TO TRACT E INFILTRATION TRENCH

CITY OF LACEY  
VERTICAL DATUM  
THURSTON COUNTY PHOTOGRAMMETRY

MERIDIAN HORIZONTAL DATUM  
CITY OF LACEY COORDINATE SYSTEM AND  
SURVEY RECORDED UNDER AUDITOR'S NO  
3111152, BASED ON THE NORTH LINE OF THE  
NW 1/4 OF SECTION 8, TOWNSHIP 18 NORTH,  
RANGE 1 WEST, W.M.  
EQUALS NORTH 88°02'08" WEST

80 40 0 80 160  
SCALE: 1" = 80'



## GEOTECHNICAL SPECIFICATIONS:

- ALL EMBANKMENT MATERIAL SHALL CONFORM TO SECTION 9-03.14(1) GRAVEL BORROW OF THE WSDOT STANDARD SPECIFICATIONS.
- EMBANKMENT MATERIAL SHALL BE PLACED AND COMPACTED TO 95% OF THE MAXIMUM DENSITY PER WSDOT/APWA STANDARDS 2-03.3(14)D.
- EMBANKMENTS SHALL BE PLACED PER WSDOT STANDARD SPECIFICATIONS METHOD C.
- AREAS TO BE FILLED SHALL BE CLEARED AND GRUBBED PRIOR TO PLACING ANY FILL MATERIAL.
- A GEOTECHNICAL FIRM CAPABLE OF SUCH WORK SHALL SUPERVISE ALL FILL PLACEMENT AND SUBMIT INSPECTION AND COMPACTION REPORTS TO THE PROJECT ENGINEER.
- NO FILL SHALL BE PLACED DURING PERIODS OF UNFAVORABLE WEATHER OR WHILE THE FILL IS FROZEN OR THAWING.
- WHEN THE WORK IS STOPPED BY RAIN, PLACEMENT OF FILL SHALL NOT RESUME UNTIL THE GEOTECHNICAL FIRM DETERMINES THAT THE MOISTURE CONTENT IS SUITABLE FOR COMPACTIVE EFFORT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REWORKING OF ANY FILL THAT HAS SOFTENED OR HAS LESS THAN THE REQUIRED COMPACTION.
- ALL DISTURBED SOILS SHALL BE SEEDED, MULCHED OR OTHERWISE PROTECTED FROM SHEET WASHING AS SOON AS POSSIBLE FOLLOWING GRADING.
- ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED UPON COMPLETION OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT COMPLETE COVERAGE OF THE DISTURBED AREAS IS PROVIDED AND THAT GROWTH OF THE VEGETATION IS ESTABLISHED. SEE ADDITIONAL REQUIREMENTS FOR EROSION CONTROL THIS SHEET.

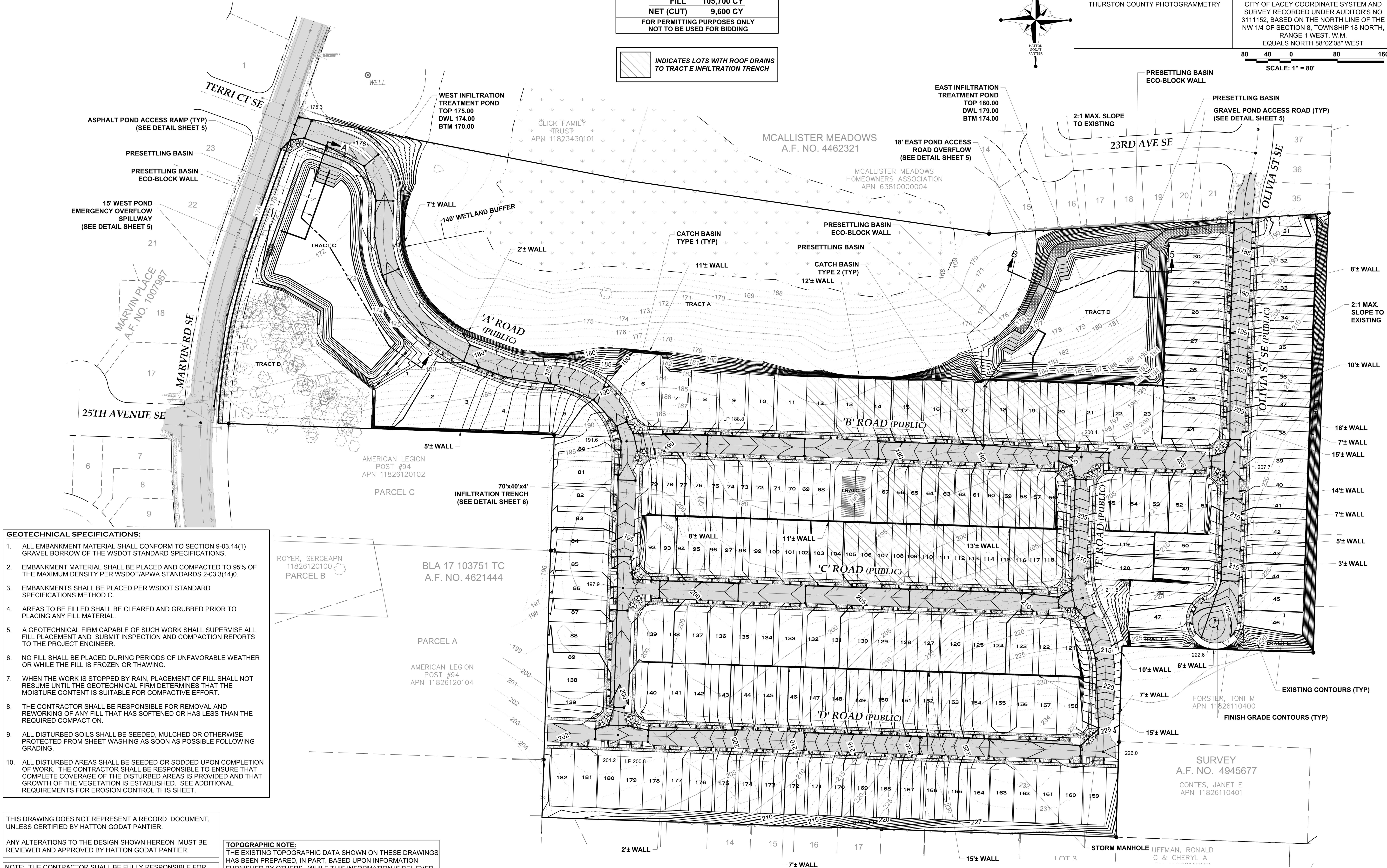
THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT,  
UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE  
REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR  
THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES.  
THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR  
TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE  
LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY  
EXCAVATION.

## TOPOGRAPHIC NOTE:

THE EXISTING TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS  
HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION  
FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED  
TO BE RELIABLE, HGP CANNOT ENSURE ITS ACCURACY AND THIS  
IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION  
OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN  
INCORPORATED INTO THESE DRAWINGS AS A RESULT.



DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H 1" = 80'  
V N/A



HATTON GODAT PANTIER  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E, SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
hatterpantier.com

REVISIONS: DATE: COUNTY COMMENTS 06/21/23

THE ENCLAVE AT OAK TREE  
LACEY, WA  
PRELIMINARY GRADING &  
DRAINAGE PLAN

AGENCY NO. 2022100898  
SHEET: 4 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX\1-088 pre grd-dm.dwg  
JOB: 21-088



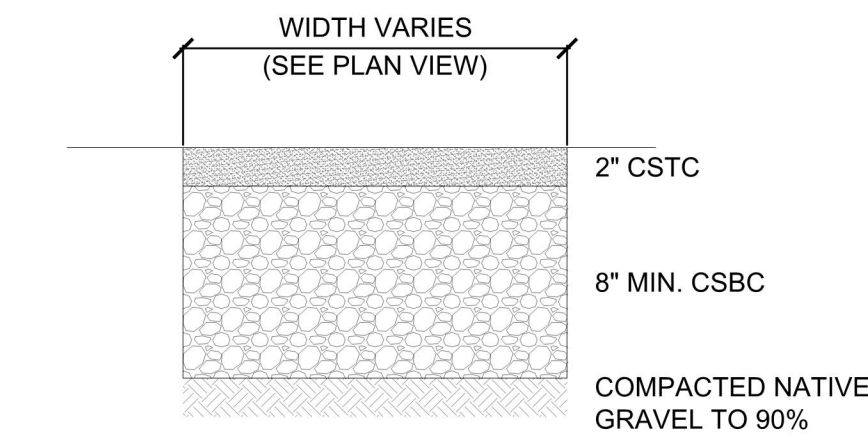
**POND BOTTOM COMPACTION NOTES:**  
COMPACTION OF SOILS IN INFILTRATION PONDS CAN SIGNIFICANTLY REDUCE THE DESIGN INFILTRATION RATE OF THE SOILS. PREVENT COMPACTION OF SOILS IN THE PRESETTLING BASIN AND INFILTRATION TREATMENT BASIN SHOWN IN THESE PLANS BY USING ONLY LOW GROUND PRESSURE VEHICLES IN BASINS DURING AND AFTER CONSTRUCTION.

**24" TREATMENT LINER NOTES:**

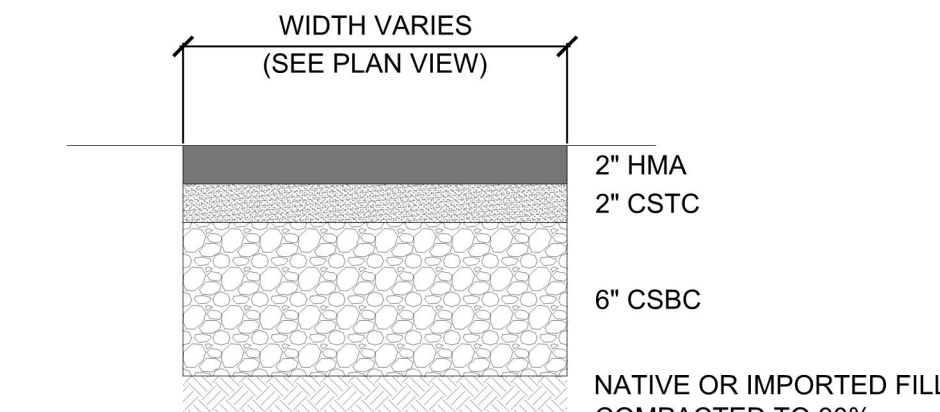
1. THE GEOTECHNICAL REPORT INDICATES A MIXTURE OF GRAVELS WITH SAND (GP TO GW) AND SANDS WITH GRAVEL (SW TO SP) OVERLAIN BY TOPSOIL AND SOME SILTY INTERBEDS IN THE VICINITY OF THE POND.
2. ONE TEST PIT PER 5,000 SQUARE FEET OF POND BOTTOM AREA SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 5' BELOW THE BOTTOM OF THE TREATMENT LINER TO VERIFY THERE IS NO IMPERVIOUS LAYER THAT WILL RESTRICT INFILTRATION.
3. THE CONTRACTOR SHALL PLAN ON OVER EXCAVATING THE POND BY A MINIMUM OF 18 INCHES AND PLACING A MIXTURE OF NATIVE SANDS AND TOPSOIL. MIXTURE TO BE APPROXIMATELY 1 PART NATIVE GRAVEL / SANDS AND 1 PART SCREENED ONSITE TOPSOIL.
4. FIELD INFILTRATION TESTS AND GRADATIONS SHALL BE COMPLETED PRIOR TO PLACEMENT OF THE LINER TO CONFIRM THE MIX MEETS THE DESIGN SPECIFICATIONS LISTED BELOW.
5. TREATMENT LINER CONSTRUCTION SHALL BE MONITORED, INSPECTED AND CERTIFIED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING FIRM.
6. TESTING MUST TAKE PLACE TO VERIFY INFILTRATION TREATMENT SOILS MEET THE FOLLOWING SPECIFICATIONS:
  - CEC >/- 5 MEQ/100 GRAMS OF DRY SOIL; USEPA 9081
  - pH BETWEEN 5.5 AND 7.0
  - 5-8% ORGANIC MATTER CONTENT BEFORE AND AFTER THE SATURATED HYDRAULIC CONDUCTIVITY TEST; ASTM D2974
  - 2-5% FINES PASSING THE US #200 SIEVE; TMECC 04.11-A.
  - MEASURED (INITIAL) SATURATED HYDRAULIC CONDUCTIVITY OF LESS THAN 12 IN/HR; ASTM D2434 AT 85% COMPACTION PER ASTM D1557 AND 2016 DDECIM APPENDIX III-A RECOMMENDED MODIFICATIONS TO ASTM D2434
  - DESIGN (LONG-TERM) SATURATED HYDRAULIC CONDUCTIVITY BETWEEN 1 AND 3 IN/HR USING A CORRECTION FACTOR OF 4.
  - COMPOST MATERIAL MUST COMPLY WITH SECTION 9-14.4(8) OF THE WSDOT STANDARD SPECIFICATIONS
7. IN THE EVENT THAT SILTY INTERBEDS ARE ENCOUNTERED AFTER POND HAS BEEN OVER EXCAVATED BY 18 INCHES, THE CONTRACTOR SHALL CONTACT THE PROJECT AND GEOTECHNICAL ENGINEERS.
8. ADDITIONAL EXCAVATION MAY BE NECESSARY TO ENSURE THE POND BOTTOM IS EXCAVATED INTO CLEAN SAND AND GRAVEL PRIOR TO PLACING THE TREATMENT LINER.
9. TREATMENT LINER TESTING RESULTS SHALL BE REVIEWED AND CERTIFIED BY THE ENGINEER-OF-RECORD (EOR) PRIOR TO SUBMITTING TO THURSTON COUNTY WATER RESOURCE'S TECHNICAL SERVICE GROUP (TSG) FOR REVIEW AND ACCEPTANCE.

**EMBANKMENT KEYING NOTE:**

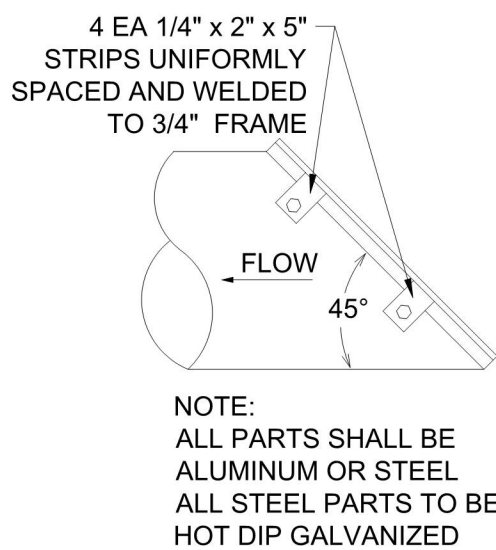
**POND EMBANKMENT DESIGN AND CONSTRUCTION DETAILS TO BE PROVIDED BY GEOTECHNICAL ENGINEER WITH FINAL DESIGN.**



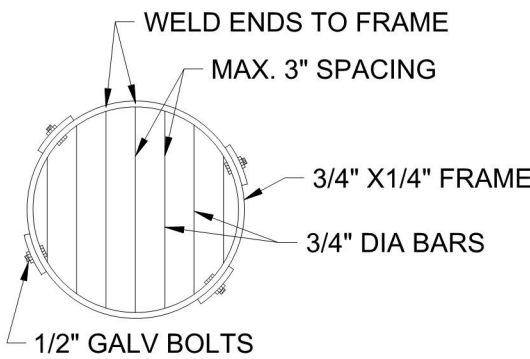
**GRAVEL POND ACCESS ROAD SECTION**  
N.T.S.



**ASPHALT POND ACCESS RAMP SECTION**  
N.T.S.

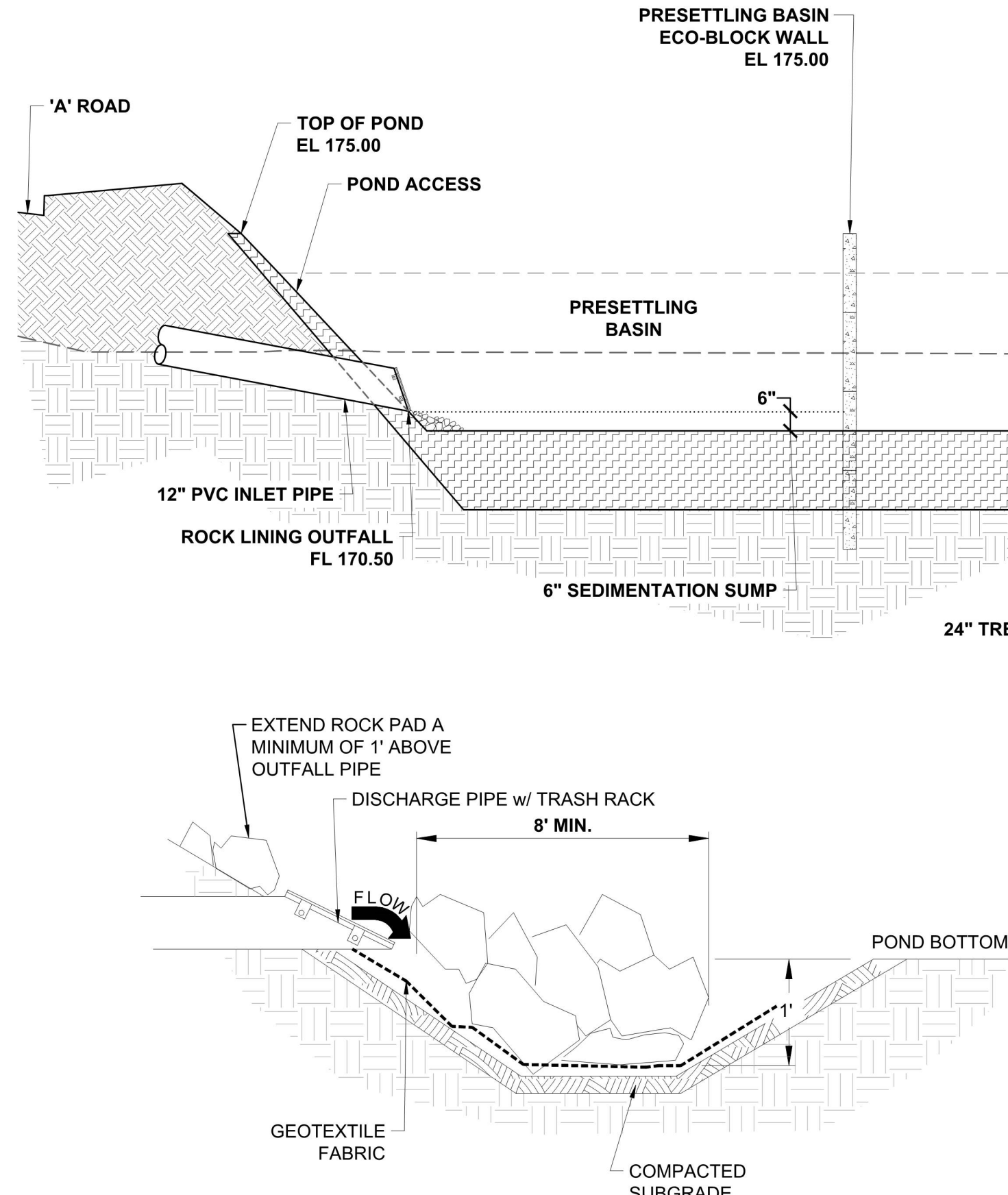


NOTE:  
ALL PARTS SHALL BE ALUMINUM OR STEEL  
ALL STEEL PARTS TO BE HOT DIP GALVANIZED



NOTE:  
PREFAB RACK INTO PIPE  
(NO BOLTS)

**TRASH RACK DETAIL**  
N.T.S.



**ROCK LINING OUTFALL DETAIL**  
N.T.S.

**ROCK LINING NOTE:**

ROCK LINING SHALL CONFORM WITH TABLE 3.7 OF THE 2022 THURSTON COUNTY DRAINAGE AND EROSION CONTROL MANUAL

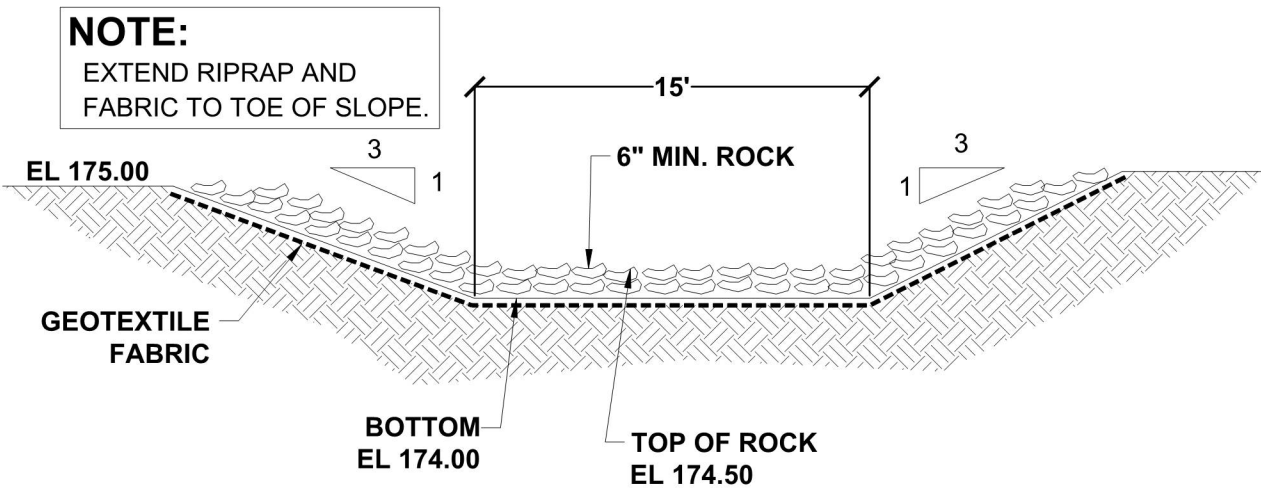
ROCK PROTECTION SHALL BE REASONABLY QUARRY SPALLS WITH THE FOLLOWING GRADATION:

- 100% PASSING 8" SQUARE SIEVE
- 40% - 60% PASSING 3" SQUARE SIEVE
- 0% - 10% PASSING 3/4" SIEVE

ARMOR POND A MINIMUM OF 3' IN EACH SIDE OF OUTFALL

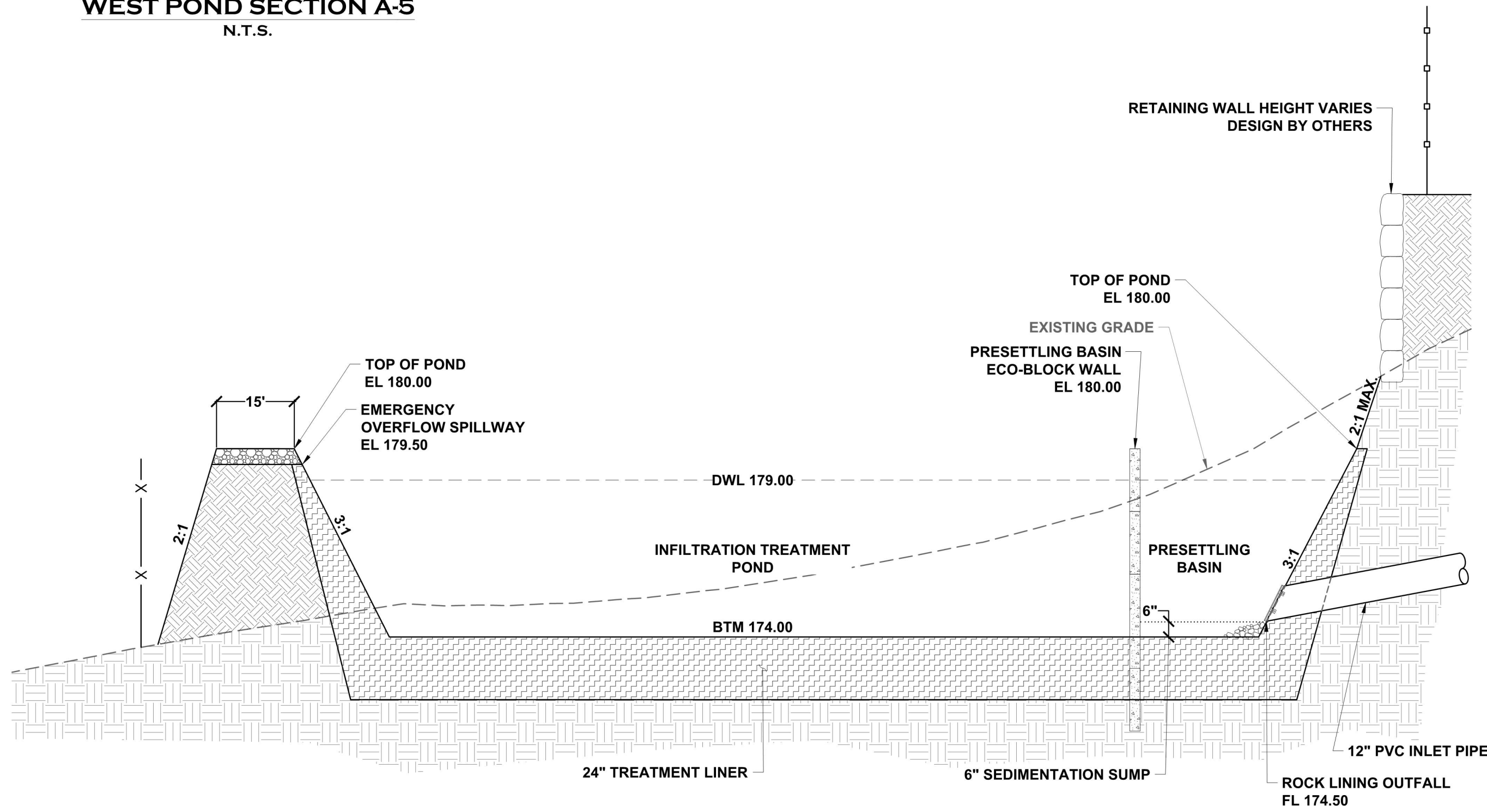
**GEOTEXTILE FABRIC NOTE:**

GEOTEXTILE FABRIC USED UNDER OVERFLOW SPILLWAYS SHALL BE US FABRICS US160NW OR APPROVED EQUIVALENT.

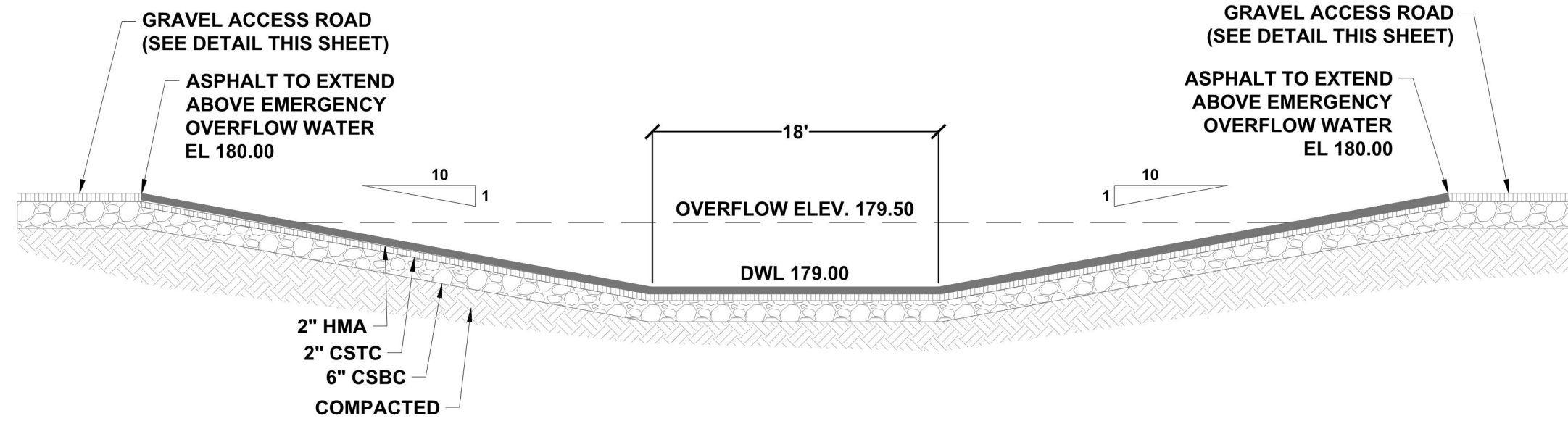


**WEST POND EMERGENCY OVERFLOW SPILLWAY**  
N.T.S.

**WEST POND SECTION A-5**  
N.T.S.



**EAST POND SECTION B-5**  
N.T.S.



**EAST POND ACCESS ROAD OVERFLOW**  
N.T.S.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT, UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H N/A  
V N/A



**HATTON GODAT PANTIER**  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E. SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
huttonpantier.com

REVISIONS: DATE: COUNTY COMMENTS 06/21/23

THE ENCLAVE AT OAK TREE LACEY, WA

**PRELIMINARY POND DETAILS**

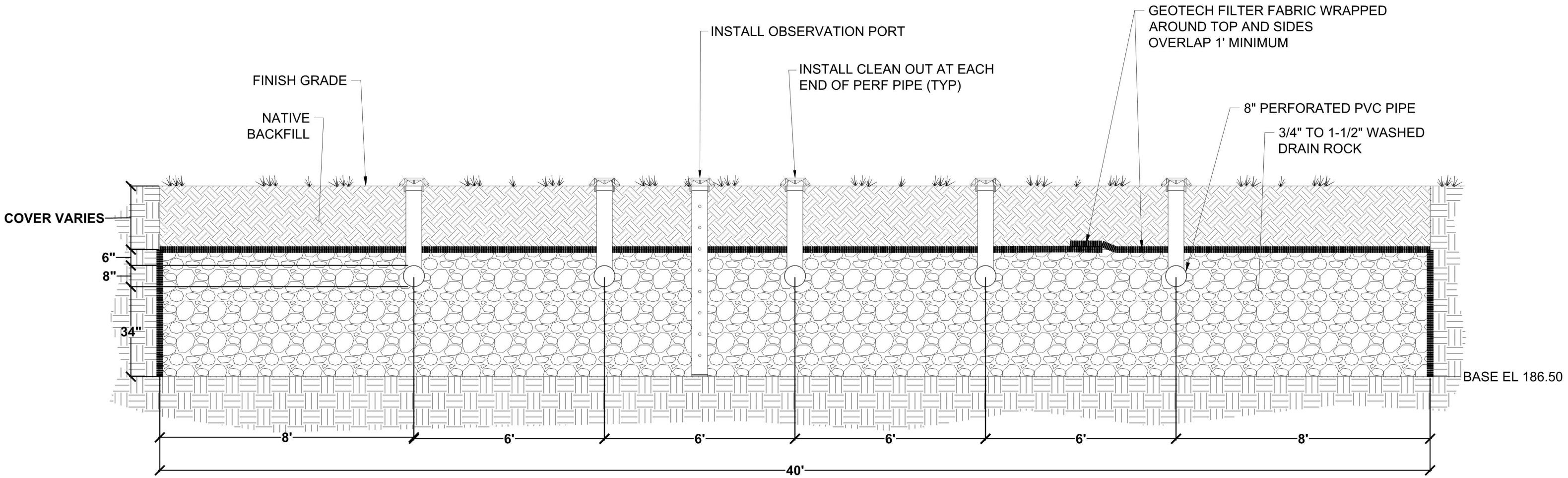
A PORTION OF THE S.W. 1/4 OF THE SE 1/4 OF SECTION 23 AND A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 28, ALL IN TOWNSHIP 8N, RANGE 1W, N.W.

TP# 11823430100, 11826110000 & 11826110300  
AGENCY NO. 2022100898  
SHEET: 5 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX\21-088 pre grd-dm.dwg  
JOB: 21-088



GENERAL NOTES (STORM DRAIN CONSTRUCTION)

1. A PRECONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START OF LAND DISTURBING ACTIVITY, CONSTRUCTION OR STAKING OF THE SITE. THE PRECONSTRUCTION MEETING SHALL INCLUDE STAFF FROM STORMWATER, WATER AND SEWER UTILITIES IF APPLICABLE.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE THURSTON COUNTY DRAINAGE DESIGN AND EROSION CONTROL MANUAL, OTHER COUNTY STANDARDS AND THE MOST CURRENT COPY OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION (WSDOT/APWA) IN THAT ORDER.
3. CONSTRUCTION SWPPP CONSISTENT WITH THE REQUIREMENTS SET FORTH IN VOL II IN THE DDECM AND INCLUDES ALL 13 ELEMENTS OR AS REQUIRED IN THE CONSTRUCTION STORMWATER GENERAL PERMIT. BMP'S SELECTED FOR IMPLEMENTATION ARE TO BE APPROVED BY ECOLOGY AND ARE TO CONFORM TO THE CURRENT STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.
4. A CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND A COPY OF THE APPROVED STORMWATER PLANS SHALL BE ONSITE AT ALL TIMES WHEN CONSTRUCTION IS IN PROGRESS. WHENEVER INSPECTION AND/OR MONITORING REVEALS THAT THE BMP'S ARE INADEQUATE, DUE TO DISCHARGE, TRACK OUT, OR POTENTIAL TO DISCHARGE, BMP'S OR DESIGN CHANGES SHALL BE IMPLEMENTED AS SOON AS POSSIBLE.
- IF DEFICIENCIES ARE IDENTIFIED THE FOLLOWING ACTIONS SHALL BE TAKEN BY THE COUNTY. IT SHALL BE AT THE DISCRETION OF THE INSPECTOR WHICH ACTION WILL BE TAKEN BASED ON THE SEVERITY OR HISTORY OF THE SITE.
- A. 1ST ACTION TAKEN IS A VERBAL WARNING TO THE FOREMAN OR PERSON OVERSEEING THE SITE.  
B. 2ND ACTION TAKEN IS A WRITTEN INSPECTION WITH ACTIONS TO BE TAKEN SIGNED BY THE FOREMAN OR PERSON OVERSEEING THE SITE.  
C. 3RD ACTION TAKEN IF CORRECTIVE ACTIONS ARE NOT TAKEN, COMPLETED OR ISSUES CONTINUE TO BE FOUND WILL BE A WRITTEN NOTICE AND A STOP WORK ORDER SHALL BE POSTED.
5. SEASONAL WORK LIMITATIONS -- FROM OCTOBER 1 THROUGH APRIL 30, CLEARING, GRADING, AND OTHER SOIL DISTURBING ACTIVITIES WILL NOT BE PERMITTED UNLESS IT IS SHOWN TO THE SATISFACTION OF THE COUNTY THAT SILT-LADEN RUNOFF WILL BE PREVENTED FROM LEAVING THE SITE THROUGH A COMBINATION OF THE FOLLOWING:
- SITE CONDITIONS INCLUDING EXISTING VEGETATIVE COVERAGE, SLOPE, SOIL TYPE, AND PROXIMITY TO RECEIVING WATERS; AND
  - LIMITATIONS ON ACTIVITIES AND THE EXTENT OF DISTURBED AREAS; AND
  - PROPOSED EROSION AND SEDIMENT CONTROL MEASURES THE COUNTY MAY EXPAND OR RESTRICT THE SEASONAL LIMITATION ON SITE DISTURBANCE BASED ON SITE INSPECTIONS, LOCAL WEATHER CONDITIONS, OR OTHER INFORMATION.
- IF, DURING THE COURSE OF ANY CONSTRUCTION ACTIVITY OR SOIL DISTURBANCE DURING THE SEASONAL LIMITATION PERIOD, SILT-LADEN RUNOFF LEAVING THE CONSTRUCTION SITE CAUSES A VIOLATION OF THE SURFACE WATER QUALITY STANDARD; OR
- IF CLEARING AND GRADING LIMITS OR EROSION AND SEDIMENT CONTROL MEASURES SHOWN IN THE APPROVED PLAN ARE NOT MAINTAINED, THE COUNTY MAY TAKE ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO A NOTICE OF VIOLATION, ADMINISTRATIVE ORDER, FINE/PENALTY, STOP-WORK ORDER, OR CORRECTION NOTICE.
6. EXPOSED SOILS SHALL NOT BE LEFT EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS BETWEEN (OCTOBER 1 – APRIL 30) OR 7 DAYS BETWEEN (MAY1 – SEPT. 30).
7. ASSURE THAT CONCRETE WASHING AND CURING WATERS, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, DEWATERING CONCRETE VAULTS, CONCRETE PUMPING AND MIXER WASHOUT IS PERFORMED OFFSITE OR IN DESIGNATED CONCRETE WASHOUT AREAS ONLY. DO NOT WASH OUT CONCRETE TRUCKS ONTO THE GROUND, OR INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS. DO NOT DUMP EXCESS CONCRETE ON SITE. EXCEPT IN DESIGNATED CONCRETE WASHOUT AREAS. REFER TO THE DRAINAGE DESIGN AND EROSION CONTROL MANUAL OR STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON FOR BMP'S. CONCRETE SPILLAGE OR CONCRETE DISCHARGE TO STORMWATER FACILITIES IS AN ILLICIT DISCHARGE.
8. APPLICANT SHALL COMPLY WITH ALL OTHER PERMITS AND OTHER REQUIREMENTS OF THE GOVERNING AUTHORITY OR AGENCY.
9. ALL STORM MAINS AND RETENTION/DETENTION AREAS SHALL BE STAKED FOR GRADE AND ALIGNMENT BY AN ENGINEERING OR SURVEY FIRM LICENSED TO PERFORM SUCH WORK.
10. STORM DRAIN PIPE MATERIALS SHALL BE AS SPECIFIED IN THE DRAINAGE DESIGN AND EROSION CONTROL MANUAL. PIPE SIZE, SLOPE, COVER, ETC., SHALL BE AS SPECIFIED IN VOLUME III OF THE DRAINAGE DESIGN AND EROSION CONTROL MANUAL.
11. THE STORM DRAINAGE SYSTEM SHALL BE CONSTRUCTED ACCORDING TO APPROVED PLANS ON FILE WITH THE JURISDICTION. ANY MATERIAL DEVIATION FROM THE APPROVED PLANS WILL REQUIRE WRITTEN APPROVAL FROM THE JURISDICTION.
12. SPECIAL STRUCTURES, OIL/WATER SEPARATORS, AND OUTLET CONTROLS SHALL BE INSTALLED PER PLANS AND MANUFACTURER'S RECOMMENDATIONS.
13. WASHINGTON LAW REQUIRES THAT THE RULES ADOPTED BY WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION BE FOLLOWED. THOSE RULES ARE SET FORTH IN RCW 19.122 AND REQUIRES ANYONE PERFORMING ANY TYPE OF DIGGING TO CALL AT LEAST TWO BUSINESS DAYS BEFORE DIGGING. DIAL 811 OR 1-800-424-5555 OR VISIT WWW.CALLBEFOREYOU.DIG.ORG.
14. ALL SURVEYING AND STAKING SHALL BE PERFORMED BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK. THE ENGINEER OR SURVEYOR DIRECTING SUCH WORK SHALL BE LICENSED BY THE STATE OF WASHINGTON.
15. THE MINIMUM STAKING OF STORM SEWER SYSTEMS SHALL BE AS FOLLOWS:
- A. STAKE LOCATION OF ALL CATCH BASINS, MANHOLES AND OTHER FIXTURES FOR GRADE AND ALIGNMENT.  
B. STAKE LOCATION, SIZE, AND DEPTH OF RETENTION/DETENTION FACILITY.  
C. STAKE FINISHED GRADE OF ALL STORMWATER FEATURES, INCLUDING BUT NOT LIMITED TO CATCH BASIN/MANHOLE RIM ELEVATIONS, OVERFLOW STRUCTURES, WEIRS, AND INVERT ELEVATIONS OF ALL PIPES IN CATCH BASINS, MANHOLES, AND PIPES THAT DAYLIGHT.
16. FINAL ELEVATIONS, LOCATIONS, SLOPES, GRADES, ROADWAY ALIGNMENTS, ETC. SHALL BE BASED ON A FIELD SURVEY CONDUCTED BY A LICENSED PROFESSIONAL SURVEYOR AND SHALL BE STAMPED BY THE SURVEYOR AS A RECORD OF THE FINAL CONSTRUCTED LOCATION AND ELEVATION OF FACILITIES SHOWN.
17. A CONTINUOUS TONING WIRE SHALL BE BURIED THE ENTIRE LENGTH OF ALL STORMWATER PIPE AND BE LOCATED AND ATTACHED TO THE TOP OF THE PIPE. THE TONING WIRE SHALL BE 12 GAUGE INSULATED GREEN TONING WIRE. THE TONING WIRE SHALL END IN CATCH BASINS, MANHOLES, OTHER STRUCTURES, AND BE PLACED IN A ORGANIZED MANNER ON A STAINLESS STEEL CONCRETE WEDGE ANCHOR AND/OR HOOK WITHIN SIX (6) INCHES OF LID OR GRATE OR END OF PIPE IF NO STRUCTURES PRESENT I.E., CROSS CULVERT WITH A MINIMUM OF FIVE (5) FOOT COIL OF WIRE SO IT WILL NOT FALL OFF AND CAN BE ACCESSED WITHOUT ENTERING THE STRUCTURE. THE TONING WIRE SHALL BE TESTED FOR CONTINUITY PRIOR TO ACCEPTANCE. ALL SPLICES WILL BE MADE WITH COPPERHEAD SNAKEBITE CONNECTORS OR 3M DBR MOISTURE DISPLACEMENT CONNECTORS SPLICE KITS DESIGNED FOR IN-GROUND USE.
18. UNDERGROUND WARNING TAPE SHALL BE PLACED APPROXIMATELY TWELVE (12") ABOVE THE TOP OF PIPE INDICATING STORMWATER PIPE.
19. ALL CULVERTS SHALL BE A MINIMUM OF TWELVE (12") DIAMETER AND OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY OR ROADWAY TO THE BOTTOM OF THE DITCH. THE CULVERT SHALL EXTEND ONE FOOT OUTSIDE THE DRIVEWAY OR ROADWAY RADIUS BEFORE THE BEVEL TO ALLOW FOR RIPRAP ARMORING TO PREVENT SLOUGHING OF THE BASE/CRUSHED ROCK INTO THE DITCH. CULVERTS SHALL HAVE BEVELED ENDS TO MATCH THE SIDE SLOPE. DUCTILE IRON PIPE SHALL BE CUT SHORT TO ALLOW FOR TRANSITION TO PVC OR PE BEVELED PIPE ENDS THAT ARE EXPOSED IN OPEN CONVEYANCE SYSTEM.
20. THE STORM DRAINAGE SYSTEM SHALL BE CONSTRUCTED ACCORDING TO ACCEPTED PLANS ON FILE WITH THE COUNTY. ANY MATERIAL DEVIATION FROM THE PLANS WILL REQUIRE WRITTEN ACCEPTANCE FROM THE DRAINAGE MANUAL ADMINISTRATOR OR DESIGNEE.
21. CATCH BASIN GRATES SHALL BE DIRECTIONAL GRATES WHERE GRADE OR SLOPE IS GREATER THAN OR EQUAL TO 1%.
22. A COPY OF THE ACCEPTED STORM WATER PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
23. ALL BUILDING DOWNSPOUTS ON COMMERCIAL SITES SHALL BE CONNECTED TO THE STORM DRAINAGE SYSTEM, UNLESS OTHERWISE ACCEPTABLE TO THE COUNTY.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. ALL SECTIONS OF THE CURRENT WSDOT STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL OR MUTCD SHALL APPLY.
25. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN STREET USE AND OTHER RELATED OR REQUIRED PERMITS PRIOR TO ANY CONSTRUCTION ACTIVITY IN THE COUNTY RIGHT-OF-WAY. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ANY CONSTRUCTION.
26. ALL NEW STORM DRAIN PIPELINES SHALL BE CLOSED-CIRCUIT TELEVISION (CCTV) INSPECTED AND AIR PRESSURE TESTED (APT) BY THE DEVELOPER, CONTRACTOR OR APPLICANT AFTER ALL UNDERGROUND UTILITIES ARE INSTALLED AND COMPACTION OF THE ROADWAY SUBGRADE IS COMPLETE. REQUIRED PRE-NOTIFICATION: THE CONTRACTOR SHALL NOTIFY THE COUNTY STORM AND SURFACE WATER UTILITY AT 360-867-2099 AT LEAST 3 WORKING DAYS IN ADVANCE OF THE FIRST TELEVISION INSPECTION.
27. THERMO-PLASTIC DRAINAGE MARKINGS ARE REQUIRED FOR ALL STRUCTURES IN THE ROADWAY. PLEASE CONTACT THE STORM AND SURFACE WATER UTILITY AT 360-867-2099 FOR MARKING STANDARDS.
28. THE PROJECT ENGINEER SHALL INSPECT DRAINAGE AND EROSION CONTROL FACILITIES PERIODICALLY DURING CONSTRUCTION. THE PROJECT ENGINEER SHALL PROVIDE, AT A MINIMUM, INSPECTION CERTIFICATION FOR THE DRAINAGE AND EROSION CONTROL FACILITIES FOLLOWING ANY STORM EVENT WITH PRECIPITATION EQUAL TO OR EXCEEDING 2 INCHES IN A 24-HOUR PERIOD. FAILURE TO SUBMIT CERTIFICATION TO THE COUNTY WITHIN 24 HOURS FOLLOWING SUCH AN EVENT MAY RESULT IN A STOP WORK ORDER BEING PLACED ON THE PROJECT.
29. ALL CASTINGS OR STRUCTURES NOT IN PAVEMENT AREAS, AND NOT IN THE ROADWAY RIGHT-OF-WAY OF A PAVED ROAD, SHALL BE SET SIX INCHES (6") ABOVE FINISHED GRADE. THEY SHALL HAVE A CAST IRON FRAME AND COVER GROUTED TO JUST UNDER THE TOP OF THE FRAME AND A CONCRETE PAD EXTENDING OUT 2 FEET IN ALL DIRECTIONS.
30. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SIMILARLY STABILIZED TO THE SATISFACTION OF THURSTON COUNTY. FOR SITES WHERE GRASS HAS BEEN PLANTED THROUGH HYDROSEEDING, FINAL WILL NOT OCCUR UNTIL THE GRASS HAS BEEN THOROUGHLY ESTABLISHED (90% ESTABLISHMENT), UNLESS OTHERWISE APPROVED BY THE COUNTY.
31. NO TREES OR SHRUBS MAY BE PLANTED WITHIN 25 FEET OF INLET OR OUTLET PIPES OR MANMADE DRAINAGE STRUCTURES SUCH AS SPILLWAYS OR FLOW SPREADERS. SPECIES WITH ROOTS THAT SEEK WATER, SUCH AS WILLOW OR POPLAR, SHALL BE AVOIDED WITHIN 50 FEET OF PIPES OR MANMADE STRUCTURES.
32. TCC 18.16.020 BONDING OF DRAINAGE IMPROVEMENTS SHALL NOT BE ALLOWED AND FACILITIES WILL BE CONSTRUCTED AND COMPLETE PRIOR TO FINAL.
- SUPPORTING DOCUMENTS FOR THE 2016 THURSTON COUNTY DRAINAGE MANUAL



INFILTRATION TRENCH DETAIL  
70' LONG x 40' WIDE x 4" DEEP  
N.T.S.

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT, UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H N/A  
V N/A



HATTON GODAT PANTIER  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E, SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
hatterpantier.com

REVISIONS:	DATE:
COUNTY COMMENTS	06/21/23

THE ENCLAVE AT OAK TREE  
LACEY, WA

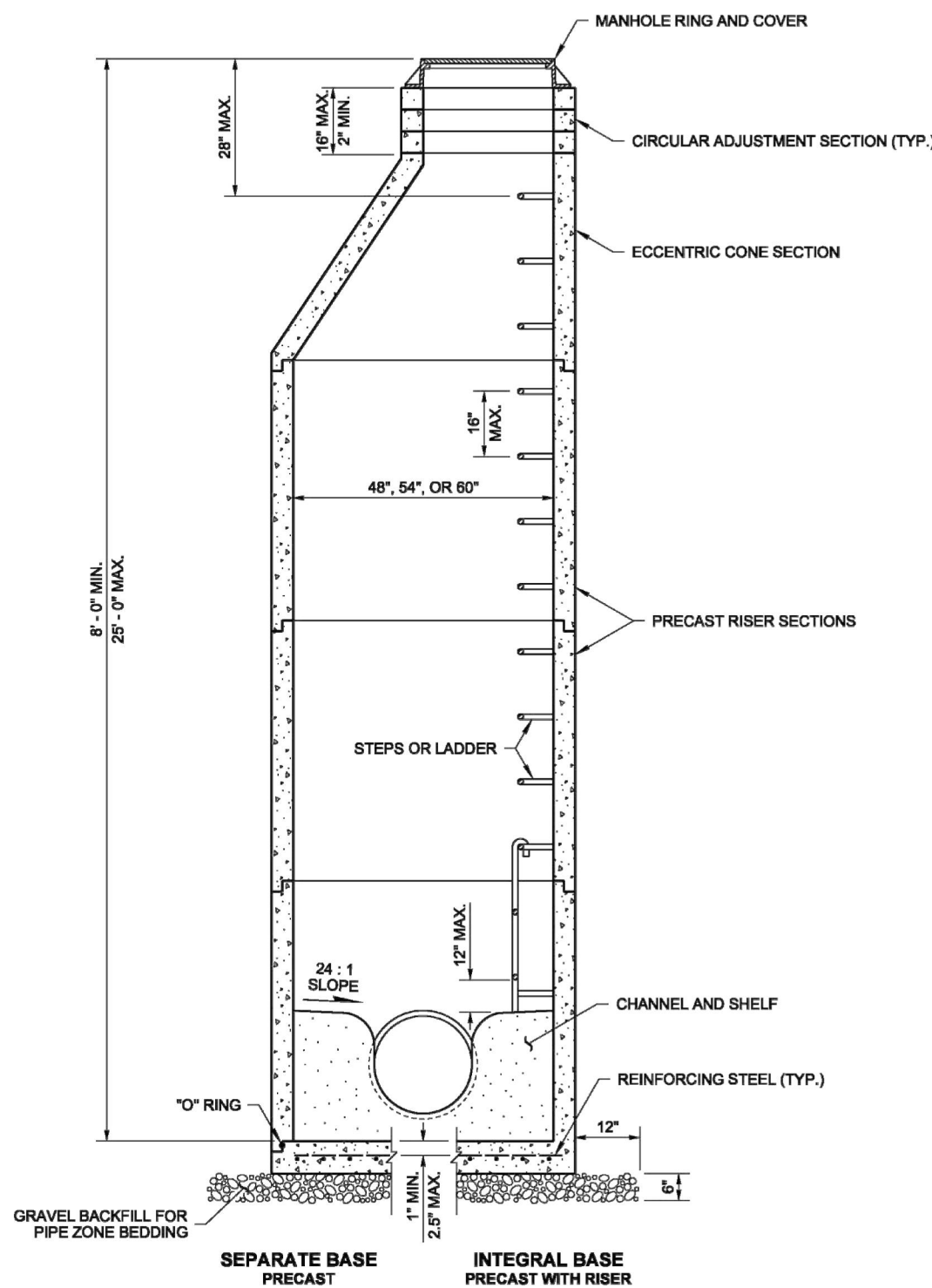
PRELIMINARY  
DRAINAGE NOTES &  
DETAILS

A PORTION OF THE SW 1/4 & SE 1/4 OF THE 1/4 OF SECTION 23 AND A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 28 & ALL IN TOWNSHIP 8N, RANGE 1W, N.W.

AGENCY NO. 2022100898  
SHEET: 6 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX: 21-088\_pre\_det.dwg  
JOB: 21-088

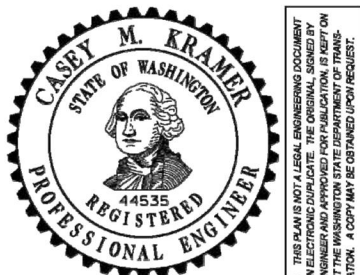


DRAWN BY: LISA CYFORD



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

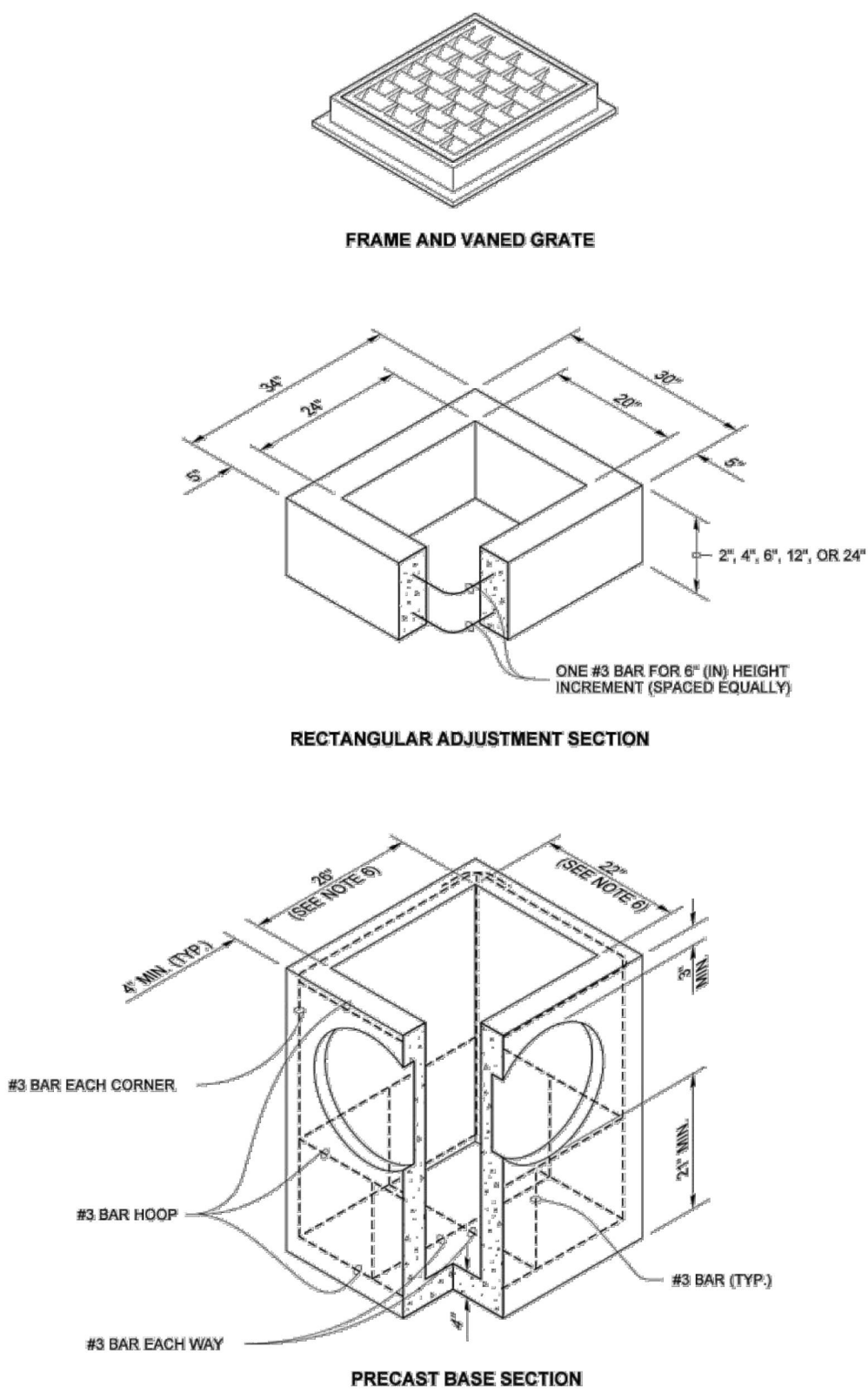
MANHOLE DIMENSION TABLE				
DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"



**MANHOLE TYPE 1**  
**STANDARD PLAN B-15.20-01**

SHEET 1 OF 1 SHEET  
APPROVED FOR PUBLICATION  
**Pasco Bakotich III** 02-07-12  
STATE DESIGN ENGINEER DATE  
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER (INCHES)
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. SECT. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. SECT. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. SECT. 9-05.12(2))	15"

\* CORRUGATED POLYETHYLENE STORM SEWER PIPE

**NOTES**

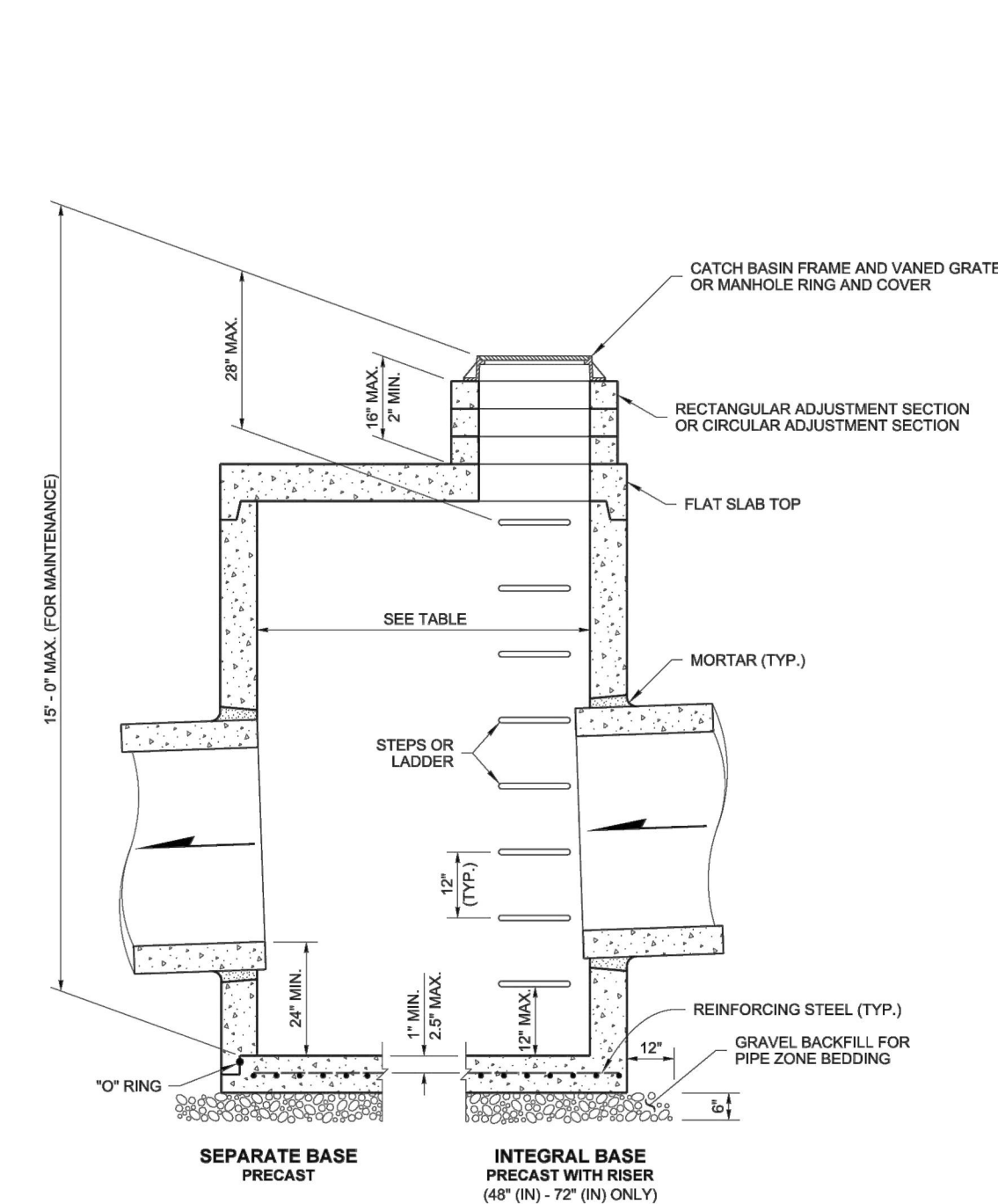
- As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
- The knockout diameter shall not be greater than 20" (in). Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.
- The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).
- The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
- The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1 : 24 or steeper.
- The opening shall be measured at the top of the **Precast Base Section**.
- All pickup holes shall be grouted full after the basin has been placed.



**CATCH BASIN TYPE 1**  
**STANDARD PLAN B-5.20-03**

SHEET 1 OF 1 SHEET  
APPROVED FOR PUBLICATION  
Digitally signed by Roark, Steve  
Date: 2020.09.09 09:45:23 -0700  
STATE DESIGN ENGINEER  
Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



**NOTES**

- No steps are required when height is 4' or less.
- The bottom of the precast catch basin may be sloped to facilitate cleaning.
- The rectangular frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
- Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.

CATCH BASIN DIMENSIONS				
CATCH BASIN DIAMETER	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"
72"	6"	8"	60"	12"
84"	8"	12"	72"	12"
96"	8"	12"	84"	12"
120"	10"	12"	96"	12"
144"	12"	12"	108"	12"

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

- ① Corrugated Polyethylene Storm Sewer Pipe (See **Standard Specification Section 9-05.20**)  
② (See **Standard Specification Section 9-05.12(1)**)  
③ (See **Standard Specification Section 9-05.12(2)**)  
④ Polypropylene Pipe (See **Standard Specification Section 9-05.24**)



**CATCH BASIN TYPE 2**  
**STANDARD PLAN B-10.20-02**

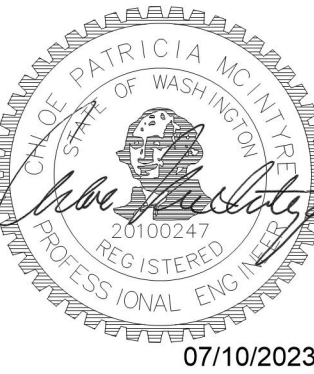
SHEET 1 OF 1 SHEET  
APPROVED FOR PUBLICATION  
Digitally signed by Heilman, Julie  
Date: 2018.02.20 12:49 PM  
STATE DESIGN ENGINEER  
Washington State Department of Transportation

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT, UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H N/A  
V N/A



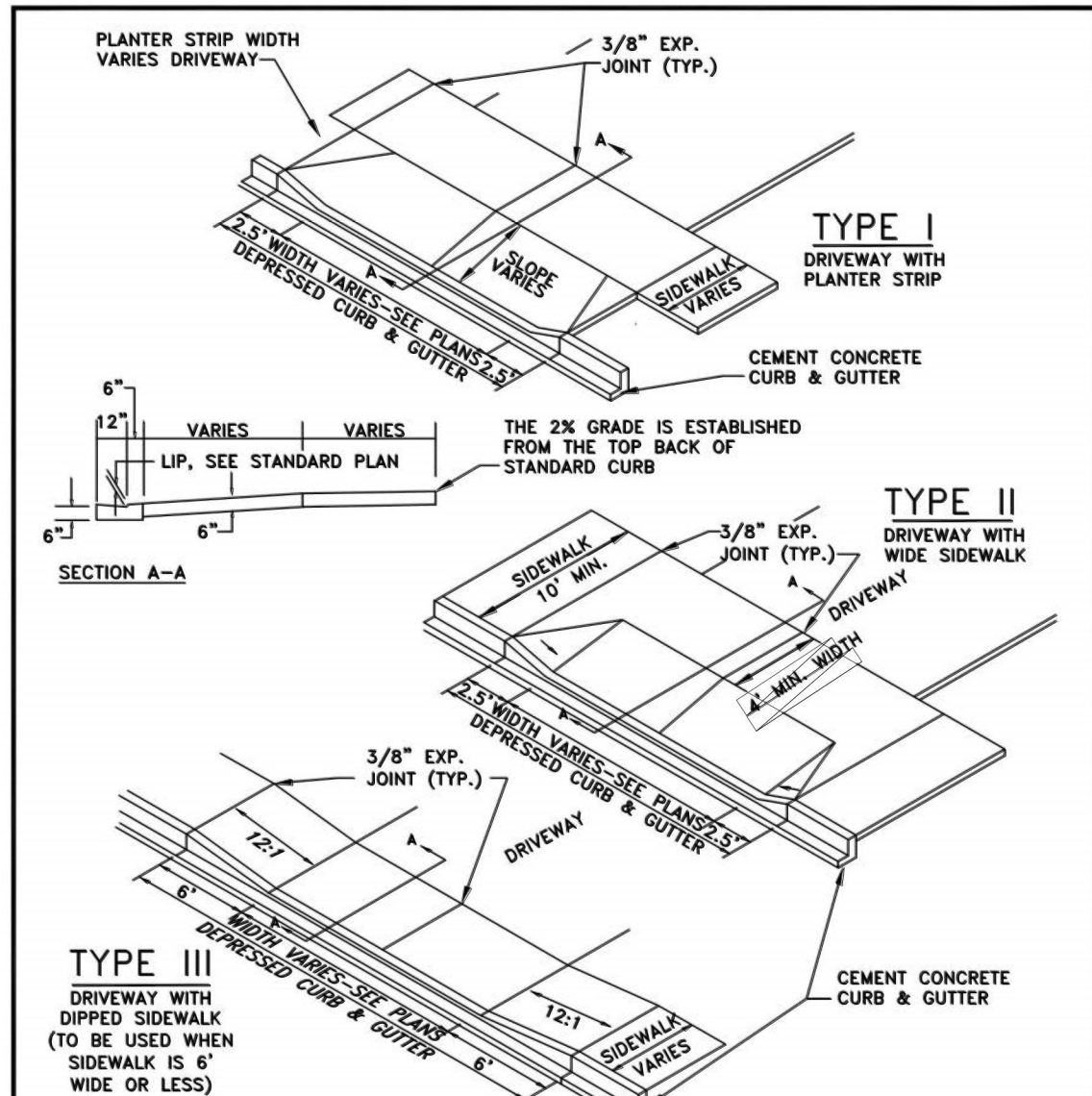
**HATTON GODAT PANTIER**  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E. SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
hatterpantier.com

REVISIONS: DATE: COUNTY COMMENTS 06/21/23

**THE ENCLAVE AT OAK TREE LACEY, WA**  
**PRELIMINARY DRAINAGE DETAILS**  
A PORTION OF THE SW & SE 1/4 OF THE SE 1/4 OF SECTION 23 AND A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 26 ALL IN TOWNSHIP 36N, RANGE 14W, W.M.

AGENCY NO. 2022100898  
SHEET: 7 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX: 21-088\_pre det.dwg  
JOB: 21-088





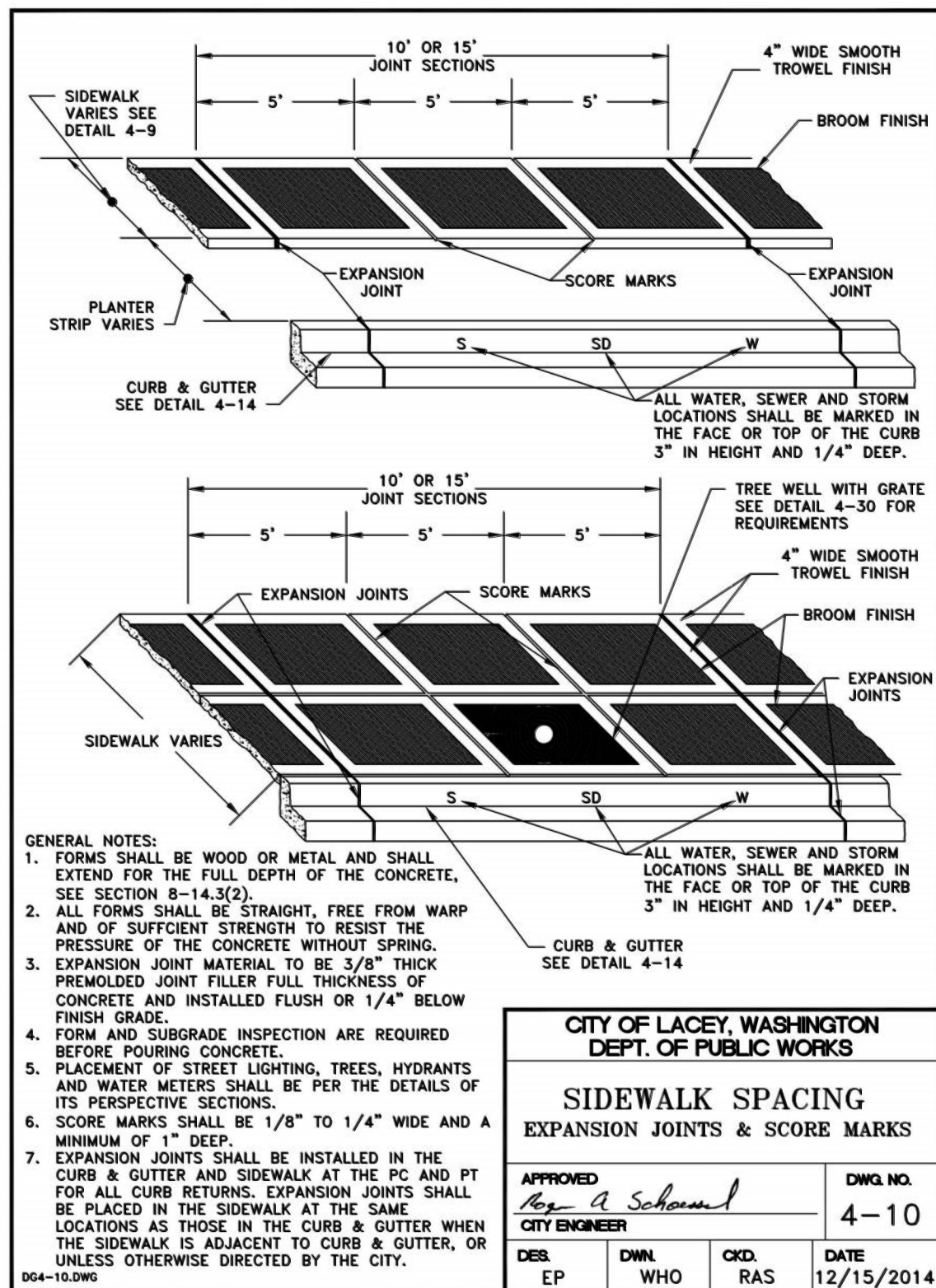
**CITY OF LACEY, WASHINGTON  
DEPT. OF PUBLIC WORKS**

**CEMENT CONCRETE DRIVEWAY**

APPROVED: *Roy A. Schumacher*  
CITY ENGINEER

DES. WHO DWN. WHO CKD. MAH. DATE 12/15/2014

DWG. NO. 4-7



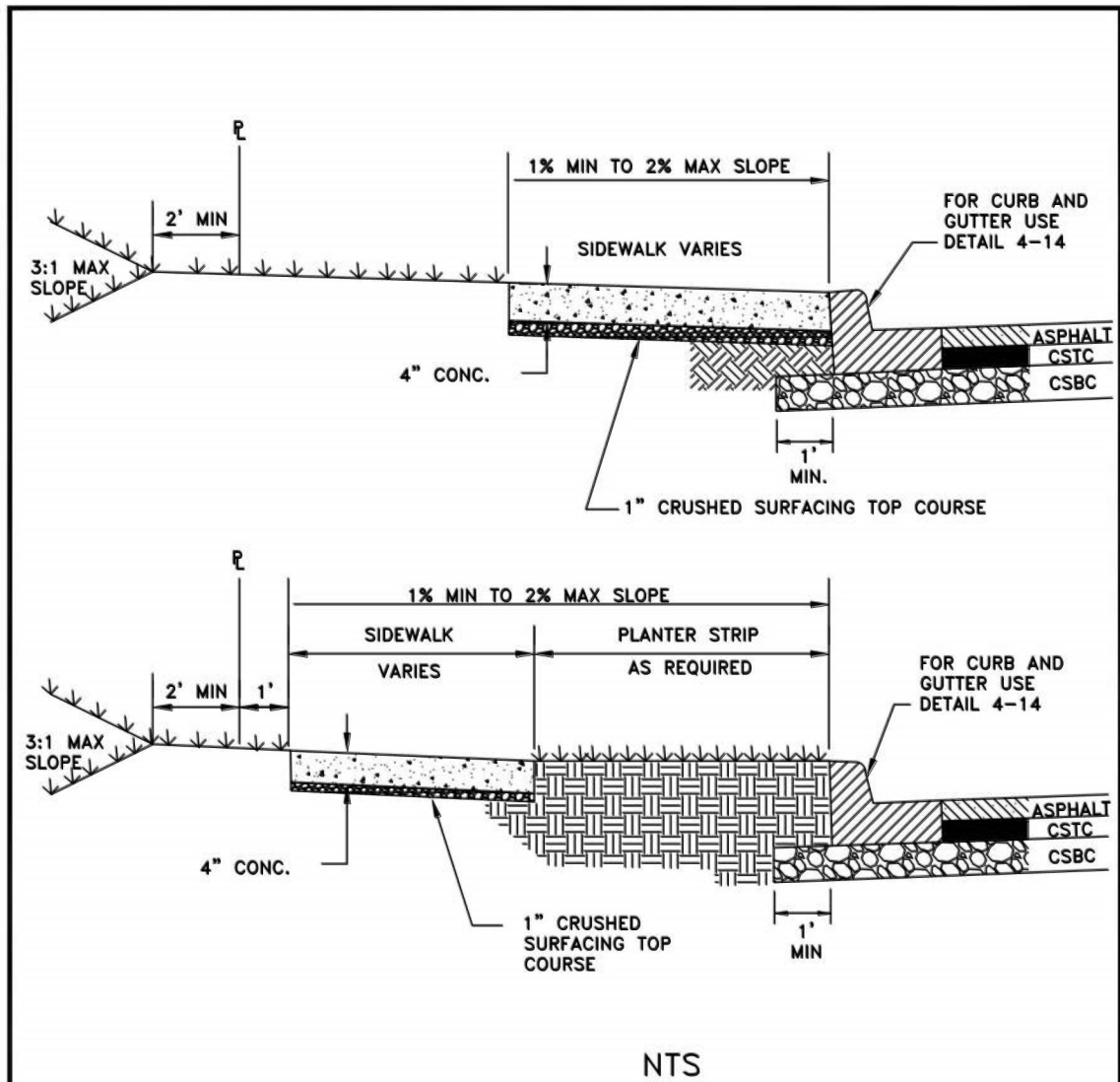
**CITY OF LACEY, WASHINGTON  
DEPT. OF PUBLIC WORKS**

**SIDEWALK SPACING  
EXPANSION JOINTS & SCORE MARKS**

APPROVED: *Roy A. Schumacher*  
CITY ENGINEER

DES. EP DWN. WHO CKD. RAS. DATE 12/15/2014

DWG. NO. 4-10



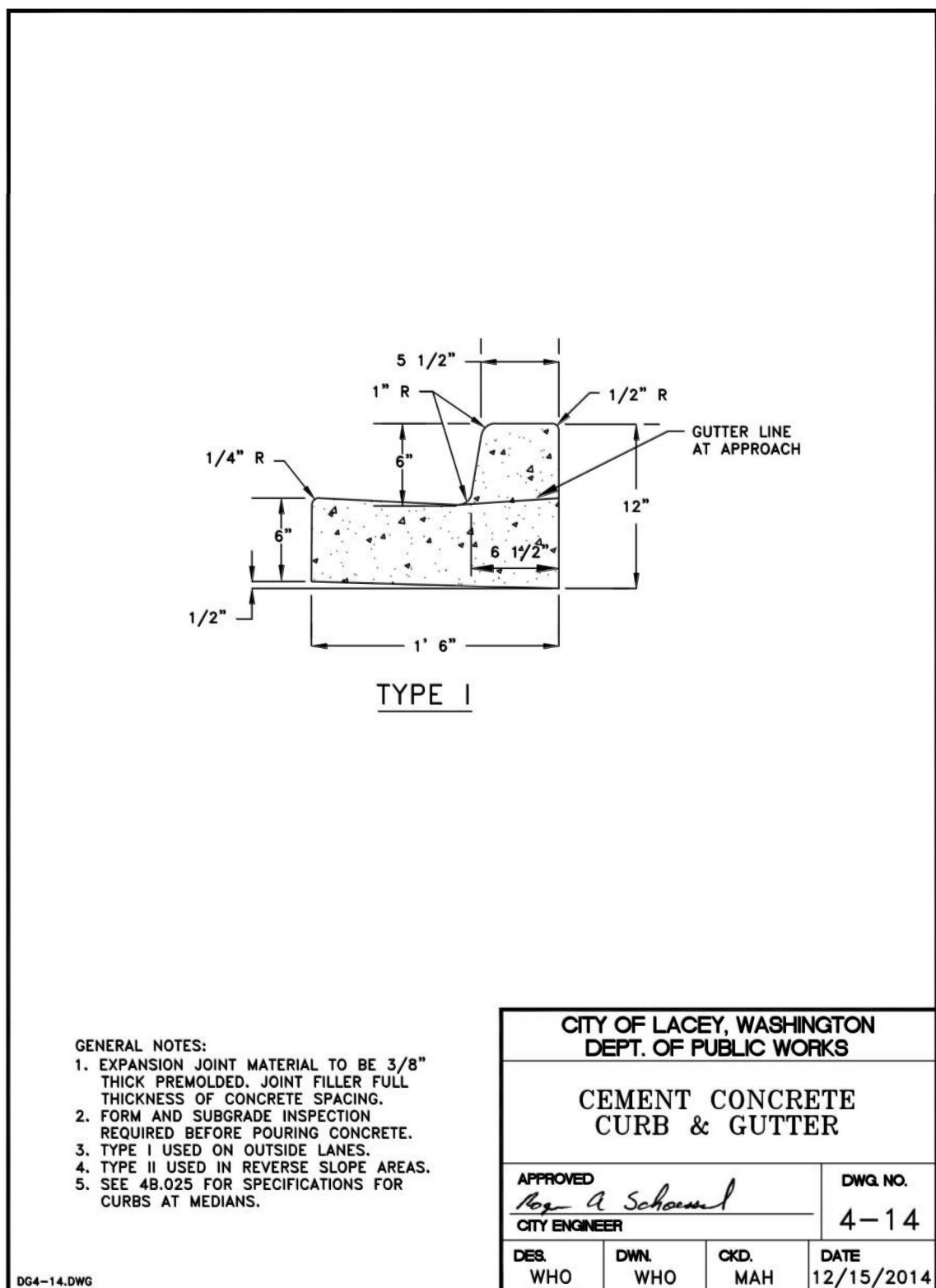
**CITY OF LACEY, WASHINGTON  
DEPT. OF PUBLIC WORKS**

**SIDEWALK**

APPROVED: *Roy A. Schumacher*  
CITY ENGINEER

DES. WHO DWN. WHO CKD. RAS. DATE 12/15/2014

DWG. NO. 4-9



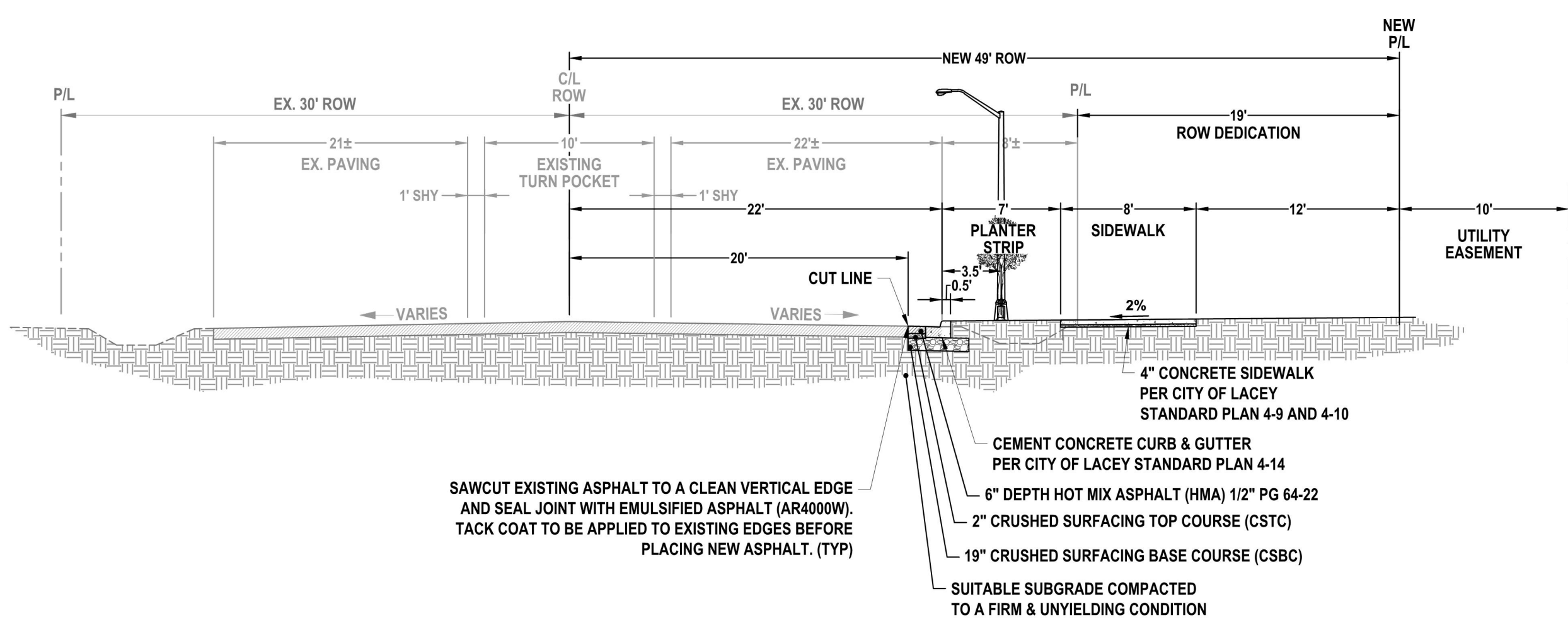
**CITY OF LACEY, WASHINGTON  
DEPT. OF PUBLIC WORKS**

**CEMENT CONCRETE CURB & GUTTER**

APPROVED: *Roy A. Schumacher*  
CITY ENGINEER

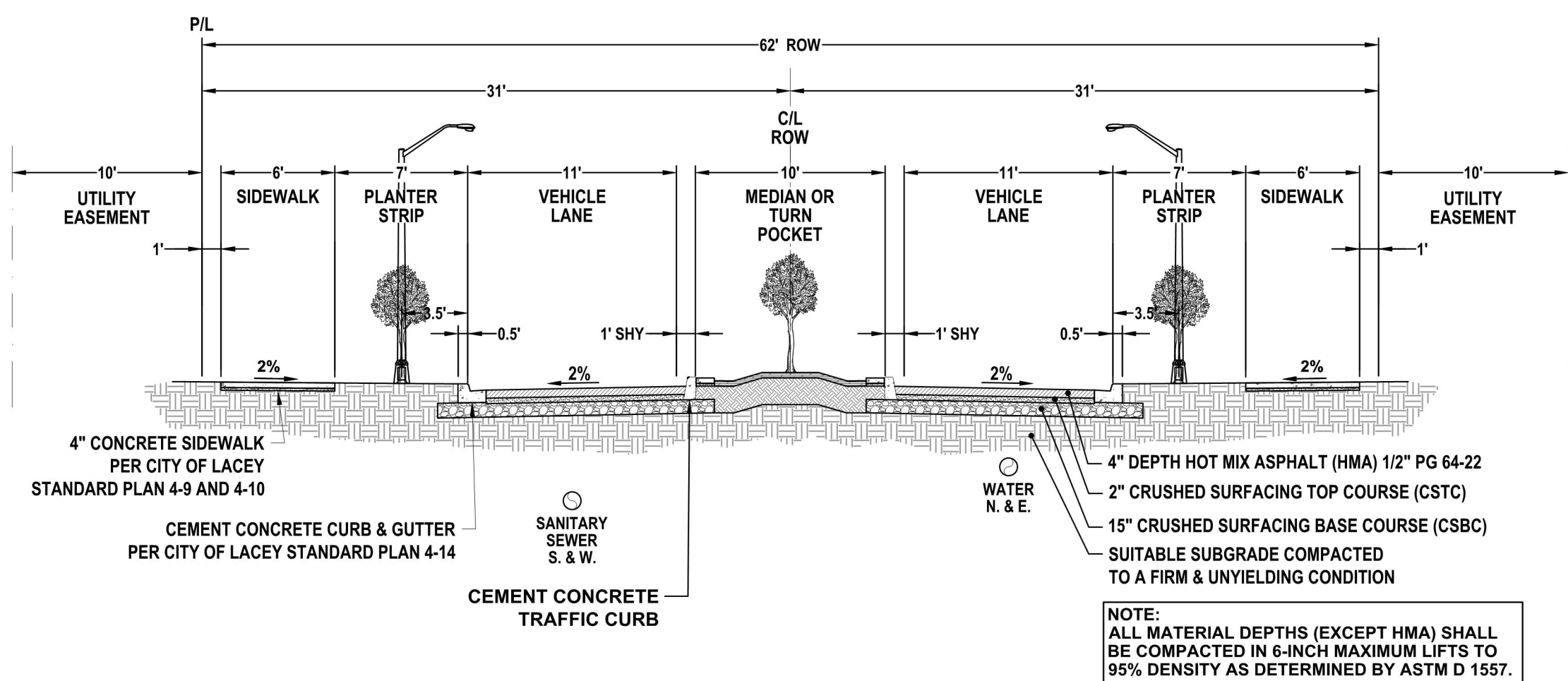
DES. WHO DWN. WHO CKD. MAH. DATE 12/15/2014

DWG. NO. 4-14



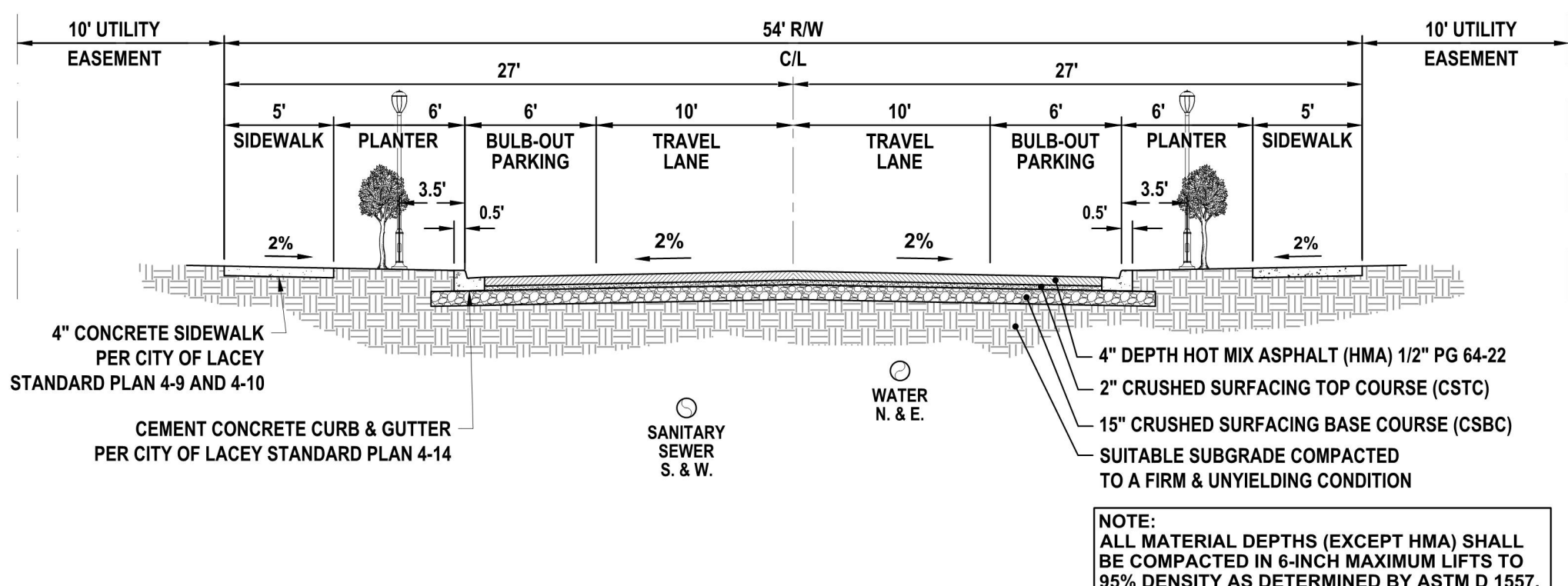
**SECTION A-8  
ARTERIAL  
MARVIN ROAD SE FRONTAGE IMPROVEMENTS**

N.T.S.



**SECTION B-8  
MAJOR COLLECTOR TYPE II**

N.T.S.



**SECTION C-8  
MAJOR LOCAL RESIDENTIAL**

N.T.S.

DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H N/A V N/A



**HATTON GODAT PANTIER**  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E. SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
hatterpantier.com

REVISIONS: DATE: COUNTY COMMENTS 06/21/23

**THE ENCLAVE AT OAK TREE  
LACEY, WA**

**PRELIMINARY  
GRADING DETAILS**

TP# 11823430100, 11826110000 & 11826110300

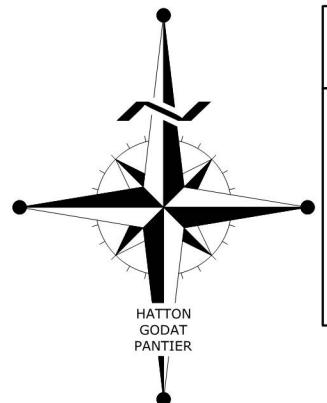
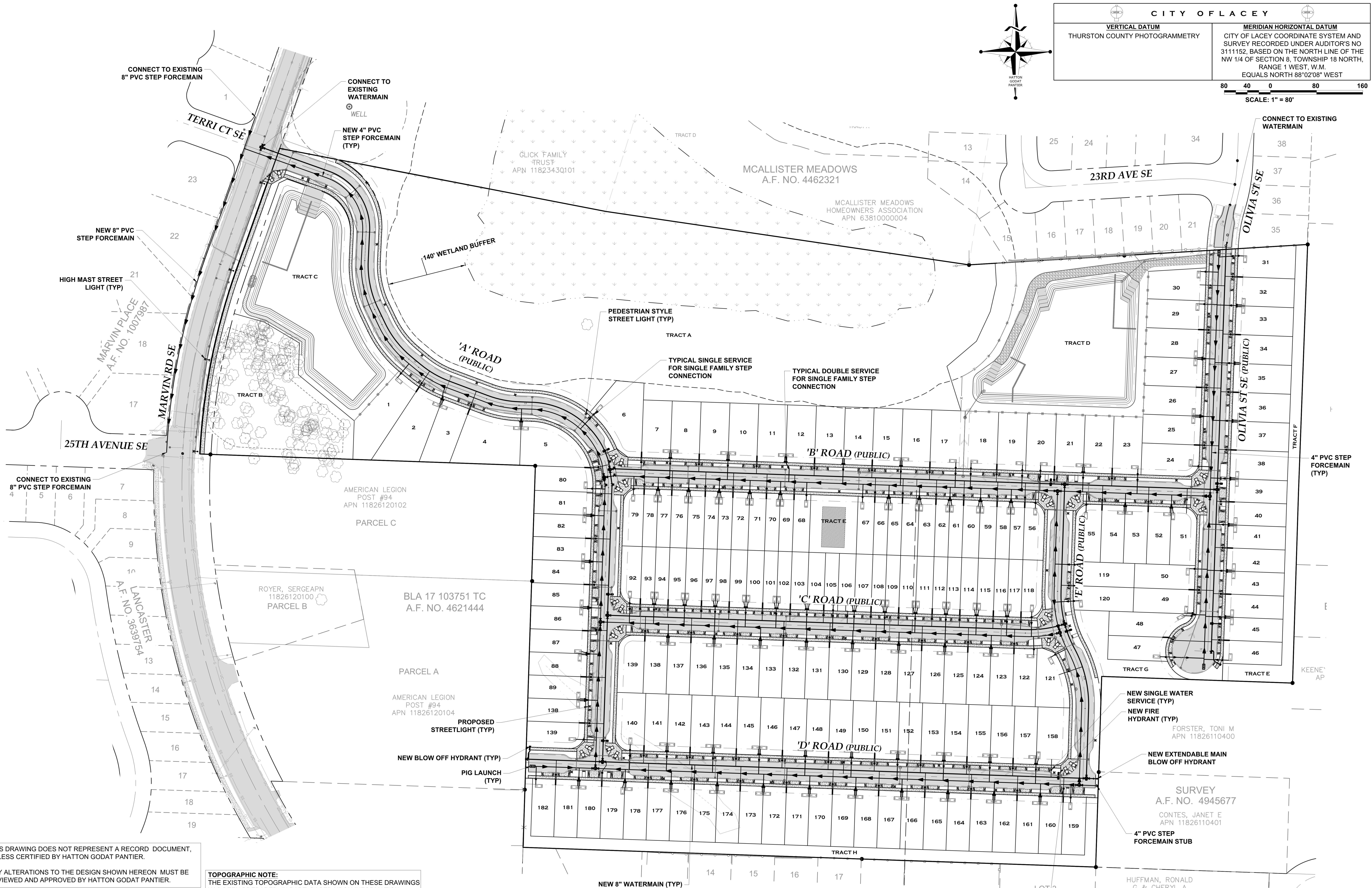
AGENCY NO. 202210098  
SHEET: 8 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX: 21-088\_pre\_det.dwg  
JOB: 21-088

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT, UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.





CITY OF LACEY	
<b>VERTICAL DATUM</b> THURSTON COUNTY PHOTOGRAMMETRY	<b>MERIDIAN HORIZONTAL DATUM</b> CITY OF LACEY COORDINATE SYSTEM AND SURVEY RECORDED UNDER AUDITOR'S NO 3111152, BASED ON THE NORTH LINE OF THE NW 1/4 OF SECTION 8, TOWNSHIP 18 NORTH, RANGE 1 WEST, W.M. EQUALS NORTH 88°02'08\"/>
80 40 0 80 160 SCALE: 1" = 80'	

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT, UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

**TOPOGRAPHIC NOTE:**  
THE EXISTING TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, HGP CANNOT ENSURE ITS ACCURACY AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H 1" = 80'  
V N/A

HATTON GODAT PANTIER  
ENGINEERS AND SURVEYORS  
3910 MARTIN WAY E, SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
hatterpantier.com

REVISIONS: DATE: COUNTY COMMENTS 06/21/23

THE ENCLAVE AT OAK TREE LACEY, WA

PRELIMINARY UTILITY PLAN

A PORTION OF THE S.W. 1/4 OF THE SE 1/4 OF SECTION 23 AND A PORTION OF THE NE 1/4 OF THE SE 1/4 OF SECTION 24, TOWNSHIP 18N, RANGE 1W, W.M.

AGENCY NO. 202210088  
SHEET: 9 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX\21-088 pre utils.dwg  
JOB: 21-088



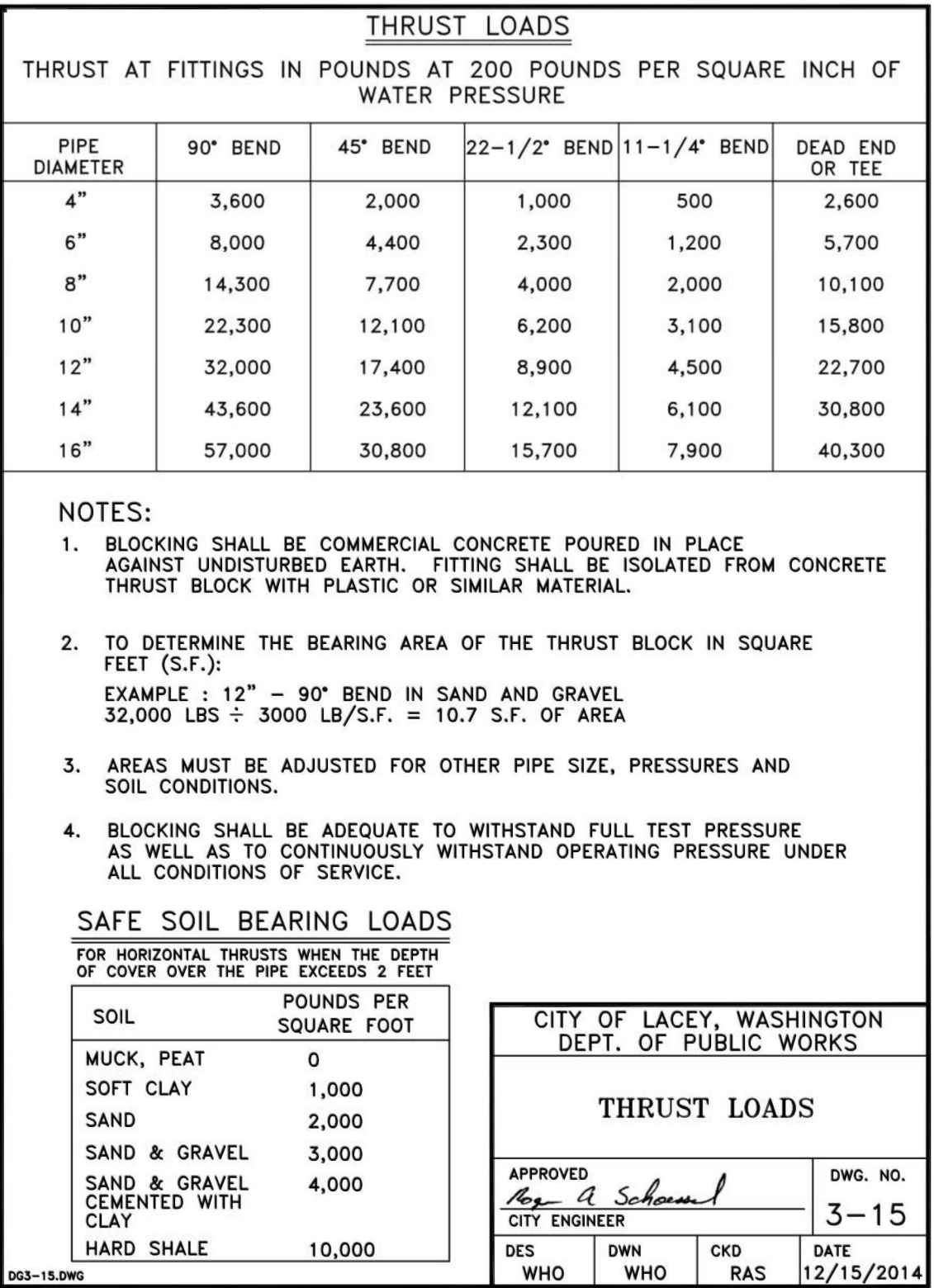
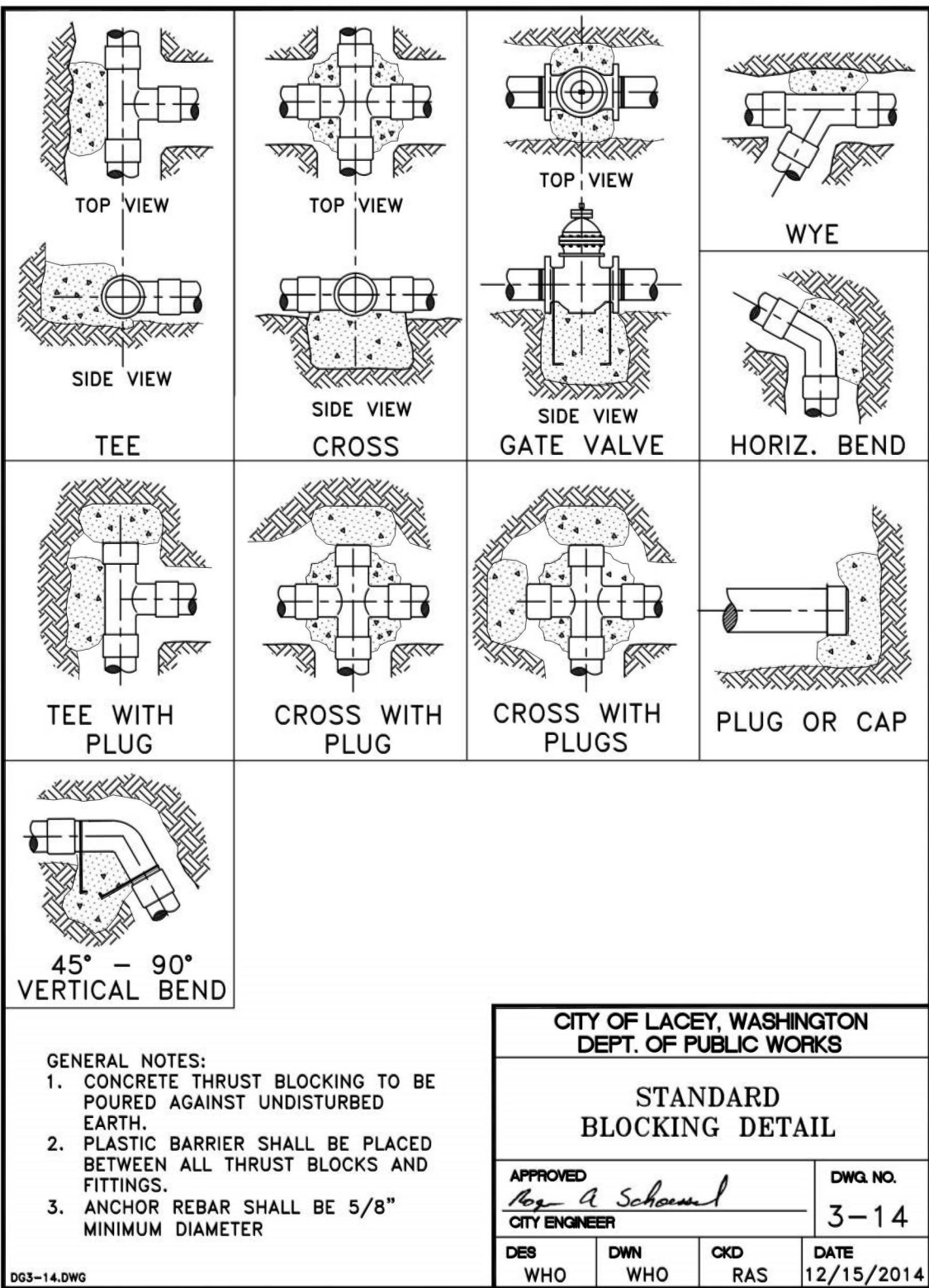
- WATER MAINS UP TO 10" SHALL BE AWWA C900 DR14 OR DUCTILE IRON STANDARD THICKNESS CLASS 52. WATER MAINS LARGER THAN 10" SHALL BE DUCTILE IRON STANDARD THICKNESS CLASS 52. SEE CHAPTER 6.0308 FOR MORE DETAILED PIPE SPECIFICATIONS.
2. ALL WATER MAINS SHALL BE DELIVERED FROM THE MANUFACTURER WITH PIPE DUST CAPS INSTALLED. THE CAPS SHALL REMAIN ON THE PIPE UNTIL THE TIME OF INSTALLATION.
3. GATE VALVES SHALL BE RESILIENT WEDGE, NRS (NON RISING STEM) WITH O-RING SEALS. VALVE ENDS SHALL BE MECHANICAL JOINT OR ANSI FLANGES. VALVES SHALL CONFORM TO AWWA C-515 LATEST REVISION. VALVES SHALL BE MUELLER, M & H, KENNEDY, CLOW R/W, WATEROUS SERIES 2500, EJ FLOWMASTER OR AMERICAN AVK.
4. EXISTING VALVES SHALL BE OPERATED BY CITY EMPLOYEES ONLY.
5. HYDRANTS SHALL BE CITY APPROVED AS SPECIFIED ON THE HYDRANT DETAILS AND SHALL BE BAGGED UNTIL THE SYSTEM IS APPROVED.
6. THE CONTRACTOR WITH THE ASSISTANCE OF THE CITY INSPECTOR SHALL INSTALL, CHLORINATE AND FILL THE WATER MAIN, INCLUDING APPURTENANCES. TESTING SHALL INCLUDE THE MAIN, VALVES, SERVICE LINES AND APPURTENANCES. AFTER TESTING IS COMPLETED, THE NEWLY CONSTRUCTED SYSTEM SHALL BE FLUSHED. AFTER FLUSHING CHLORINATED WATER FROM DISINFECTED LINES, THE CITY SHALL MEASURE CHLORINE RESIDUAL TO VERIFY THAT FLUSHING IS COMPLETE. THIS WILL BE COMPLETED PRIOR TO THE CITY TAKING MICROBIOLOGICAL SAMPLES.
7. ALL PIPE AND SERVICES SHALL BE INSTALLED WITH CONTINUOUS TRACER TAPE INSTALLED 12" TO 18" UNDER THE FINAL GROUND SURFACE. THE MARKER SHALL BE PLASTIC NON-BIODEGRADABLE, METAL CORE BACKING MARKED "WATER" WHICH CAN BE DETECTED BY A STANDARD METAL DETECTOR. TAPE SHALL BE 3 INCH WIDE TERRA TAPE "D" OR APPROVED EQUAL. IN ADDITION TO TRACER TAPE, INSTALL DIRECT BURY, U.S.E. 12 GAUGE BLUE COATED COPPER WIRE, WRAPPED AROUND OR TAPED TO THE PIPE, AS SHOWN ON DETAIL. LOW VOLTAGE GREASE-TYPE SPLICE KITS SHALL BE USED ON TRACER WIRE. AFTER THE WIRE NUT IS USED TO CONNECT THE WIRE TOGETHER AN OVERHAND KNOT SHALL BE TIED JUST OUTSIDE THE GREASE KIT TO PREVENT IT FROM COMING APART. CONTINUITY TESTING OF THE WIRE WILL BE DONE BY THE CITY.
8. ALL SERVICE LINE LOCATIONS SHALL BE MARKED ON THE TOP OR FACE OF THE CURB WITH AN EMBOSSED "W" 3 INCHES HIGH AND 1/4 INCH INTO CONCRETE.
9. THE CITY WILL BE GIVEN 72 HOURS NOTICE PRIOR TO SCHEDULING A SHUTDOWN. WHERE CONNECTIONS REQUIRE "FIELD VERIFICATION", CONNECTION POINTS SHALL BE EXPOSED BY THE CONTRACTOR AND FITTINGS VERIFIED 72 HOURS PRIOR TO DISTRIBUTING SHUTDOWN NOTICES.
10. SEPARATION BETWEEN WATER AND SEWER SHALL BE MAINTAINED PER DOE STANDARDS. SEE DEVELOPMENT GUIDELINE CHAPTER 6.130 FOR MORE INFORMATION.
11. A CONCRETE PAD PER DETAIL SHALL BE INSTALLED AROUND ALL VALVE BOXES AND BLOWOFFS THAT ARE NOT IN A PAVEMENT AREA.
12. AT ANY CONNECTION TO AN EXISTING LINE WHERE A NEW VALVE IS NOT INSTALLED, THE EXISTING VALVE MUST BE PRESSURE TESTED TO CITY STANDARDS PRIOR TO CONNECTION. IF AN EXISTING VALVE FAILS TO PASS THE TEST, THE CONTRACTOR SHALL MAKE THE NECESSARY PROVISIONS TO TEST THE NEW LINE PRIOR TO CONNECTION TO THE EXISTING SYSTEM OR INSTALL A NEW VALVE.
13. THE MINIMUM BURIAL DEPTH OF ALL WATER LINES SHALL BE 42 INCHES. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION BETWEEN SANITARY SEWERS/RECLAIMED WATER AND WATER MAINS. TO ACCOMMODATE CROSSINGS, THE MINIMUM COVER FOR WATER MAIN OF 42 INCHES MAY BE REDUCED TO 30 INCHES UPON APPROVAL BY THE CITY TO PROVIDE FOR AS MUCH VERTICAL SEPARATION AS POSSIBLE. WHEN A REDUCED DEPTH IS ALLOWED, DUCTILE IRON PIPING AND/OR CASINGS MAY BE REQUIRED. SEE 6.080 FOR CASING SPECIFICATIONS.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND DEPTH OF THE EXISTING MAIN AND PROVIDE THE FITTINGS REQUIRED TO MAKE THE CONNECTION TO THE EXISTING MAIN.
15. THE CONTRACTOR SHALL INSTALL A TEMPORARY 2 INCH BRASS BLOW OFF FOR FLUSHING AND SAMPLING ON THE EXISTING AND/OR NEW WATER MAIN. THE BLOW OFF SHALL BE CONSTRUCTED WITH A STANDARD 2 INCH TAPPING SADDLE AND FORD BRASS CORPORATION STOP WITH 2 INCH BRASS PIPE EXTENDED UP TO FINISHED GRADE. WHEN FLUSHING AND SAMPLING ARE COMPLETED, THE 2 INCH PIPE SHALL BE REMOVED. THE CORPORATION STOP SHALL BE SHUT OFF AND CAPPED TIGHT WITH A THREADED BRASS CAP.
16. WHEN AN EXISTING CITY WATER MAIN IS TO BE ABANDONED, IT SHALL BE THE DEVELOPER'S RESPONSIBILITY TO COORDINATE AND ABANDON THE EXISTING MAIN. IT SHALL ALSO BE THE DEVELOPER'S RESPONSIBILITY TO INSTALL AND TRANSFER EXISTING WATER SERVICES TO THE NEW MAIN.
17. SAND SHALL BE PLACED AROUND AND UNDER SERVICE LINES AND METER BOXES BY HAND TO A HEIGHT OF 6 INCHES ABOVE AND 6 INCHES BELOW THE LINE(S) AND BOXES. EXCAVATION FOR THE METER BOX SHALL BE AN ADDITIONAL ONE FOOT AROUND THE ENTIRE BOX AND BACKFILLED WITH SAND PER CITY DETAIL.
18. METERS 3 INCHES OR LARGER IN SIZE MUST BE ORDERED FROM CITY UTILITY BILLING BY THE CONTRACTOR/DEVELOPER A MINIMUM OF 10 WEEKS IN ADVANCE OF INSTALLATION.
19. ALL VALVE BOX, BLOW-OFF AND MANHOLE LIDS SHALL BE CLEAN AND CLEAR OF ASPHALT OR CONCRETE BEFORE SCHEDULING A WALK THROUGH.
20. THE WATER MAIN AND APPURTENANCES AND SERVICE CONNECTIONS TO THE METER SETTER SHALL BE TESTED IN SECTIONS OF CONVENIENT LENGTHS UNDER A HYDROSTATIC PRESSURE EQUAL TO 150 PSI IN EXCESS OF THAT UNDER WHICH IT WILL OPERATE. IN NO CASE SHALL THE TEST PRESSURE BE LESS THAN 225 PSI.
21. ALL WATER MAINS AND SERVICE LINES SHALL BE BEDDED PER DETAIL 6-26.0 AND MEETING THE PIPE BEDDING SPECIFICATION CHART REQUIREMENTS.
22. ALL BRASS PIPE AND FITTINGS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA AND COMPLY WITH PUBLIC LAW 111-380 (REDUCTION OF LEAD IN DRINKING WATER ACT). IMPORTED BRASS PIPE AND FITTINGS SHALL NOT BE PERMITTED.
23. WHEN USING A HYDRANT METER TO FILL A TANKER TRUCK OR PORTABLE TANK OF ANY KIND, AN APPROVED PERMANENTLY INSTALLED AIR GAP OF AT LEAST TWO TIMES THE INSIDE DIAMETER OF THE FILL PIPE IS REQUIRED. SEE DETAIL. ANY AIR GAP ON TANKER TRUCKS OR PORTABLE TANKS USED WITHIN THE CITY OF LACEY WATER SYSTEM MUST BE INSPECTED ANNUALLY BY A CERTIFIED BACKFLOW ASSEMBLY TESTER (BAT) AND A TYPICAL BACKFLOW PREVENTION TEST REPORT SUBMITTED TO THE LACEY CROSS-CONNECTION SPECIALIST. (SEE APPENDIX V)

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT,  
UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE  
REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

1. ALL SEWER MAINS SHALL BE FIELD STAKED FOR GRADES AND ALIGNMENT IN ACCORDANCE WITH SECTION 7A.030 OF THE DEVELOPMENT GUIDELINES.
2. ALL SIDE SEWER LOCATIONS SHALL BE MARKED ON THE FACE OF THE CURB WITH AN EMBOSSED "S" 3" HIGH AND 1/4 INCH INTO CONCRETE.
3. BEDDING OF THE PRESSURE SEWER MAIN AND COMPACTION OF THE BACKFILL MATERIAL SHALL BE REQUIRED. (SEE DETAIL).
4. A 3 FOOT SQUARE X 8 INCH THICK CONCRETE PAD WITH #4 REBAR SHALL BE INSTALLED AROUND ALL VALVES THAT ARE NOT IN A PAVEMENT AREA.
5. TEMPORARY STREET PATCHING SHALL BE ALLOWED FOR AS APPROVED BY THE CITY ENGINEER. TEMPORARY STREET PATCHING SHALL BE PROVIDED BY PLACEMENT AND COMPACTION OF 1 INCH MAXIMUM ASPHALT CONCRETE COLD MIX. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AS REQUIRED.
6. EROSION CONTROL MEASURES SHALL BE TAKEN BY THE CONTRACTOR DURING CONSTRUCTION TO PREVENT INFILTRATION OF EXISTING AND PROPOSED STORM DRAINAGE FACILITIES AND ROADWAYS.
7. ALL BURIED POWER FOR S.T.E.P./GRINDER SYSTEMS SHALL BE INSTALLED WITH CONTINUOUS TRACER TAPE INSTALLED 12 INCHES ABOVE THE BURIED POWER. THE MARKER SHALL BE PLASTIC NON-BIODEGRADABLE, METAL CORE BACKING MARKED "POWER". TAPE SHALL BE FURNISHED BY CONTRACTOR.
8. PRESSURE MAINS LESS THAN 4 INCHES IN DIAMETER SHALL BE HDPE SDR 11 OR SCHEDULE 40 PVC ASTM D1784 WITH RUBBER GASKET JOINTS. PRESSURE MAINS 4 INCHES IN DIAMETER OR GREATER SHALL BE HDPE SDR 11 OR PVC C-900DR 14. CERTAIN-TED CERTA-LOK C-900 R/J PIPE IS APPROVED FOR USE WHERE RESTRAINED JOINTS ARE REQUIRED. WELDED POLY (HDPE) PIPE SHALL BE HI DENSITY ASTM D 3350, SDR 11 4710 SOCKET WELDED OR BUTT FUSION WELDED. HDPE PIPE SHALL BE SIZED BY INSIDE PIPE DIAMETER. FITTINGS AND VALVES SHALL COMPLY WITH SECTION 7E.040 OF THE DEVELOPMENT GUIDELINES. PIPING FOR SEWER LINES SHALL BE GREEN, WHITE OR BLACK. HDPE SEWER PIPE SHALL BE GREEN OR BLACK WITH A GREEN STRIPE MANUFACTURED ON THE PIPE.
9. S.T.E.P./GRINDER SERVICE LINE FROM MAIN CONNECTION TO SERVICE BALL VALVE SHALL BE 1 1/2 INCH OR 2 INCH DIAMETER SCHEDULE 40 PVC. HDPE PIPE SHALL BE HI DENSITY ASTM D 3350, SDR 11 4710 SOCKET OR BUTT FUSION WELDED.
10. ALL PLASTIC PIPE AND SERVICES SHALL BE INSTALLED WITH CONTINUOUS TRACER TAPE INSTALLED 12 INCHES TO 18 INCHES UNDER THE PROPOSED FINISHED SUB GRADE. THE MARKER SHALL BE PLASTIC NON-BIODEGRADABLE, METAL CORE OR BACKING MARKED SEWER WHICH CAN BE DETECTED BY A STANDARD METAL DETECTOR. IN ADDITION, S.T.E.P. SYSTEMS AND PRESSURE MAINS SHALL BE INSTALLED WITH 12 GAUGE DIRECT BURY, U.S.E. GREEN COATED COPPER WIRE WRAPPED AROUND ALL PLASTIC PIPE, BROUGHT UP AND TIED OFF AT VALVE BODY. CONTINUITY TESTING OF THE WIRE WILL BE DONE BY THE CITY. TAPE SHALL BE TERRA TAPE "D" OR APPROVED EQUAL. THE TAPE AND WIRE SHALL BE FURNISHED BY THE CONTRACTOR.

REVISÉ: 03/2014



TEL: 360.943.1599 FAX: 360.357.6299  
hattonpantier.com

REVISIONS: \_\_\_\_\_ DATE: \_\_\_\_\_  
COUNTY COMMENTS 06/21/23  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# PRELIMINARY UTILITY DETAILS - 1

A PORTION OF THE SW & SE 1/4 OF THE SE 1/4 OF SECTION 23 AND A PORTION OF THE NE 1/4 OF THE NE 1/4 OF SECTION 26, ALL IN TOWNSHIP 18N, RANGE 1W, W.M.

NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

AGENCY NO. 2022100898  
SHEET: 10 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX: 21-088 pre det.dwg  
JOB: 21-088



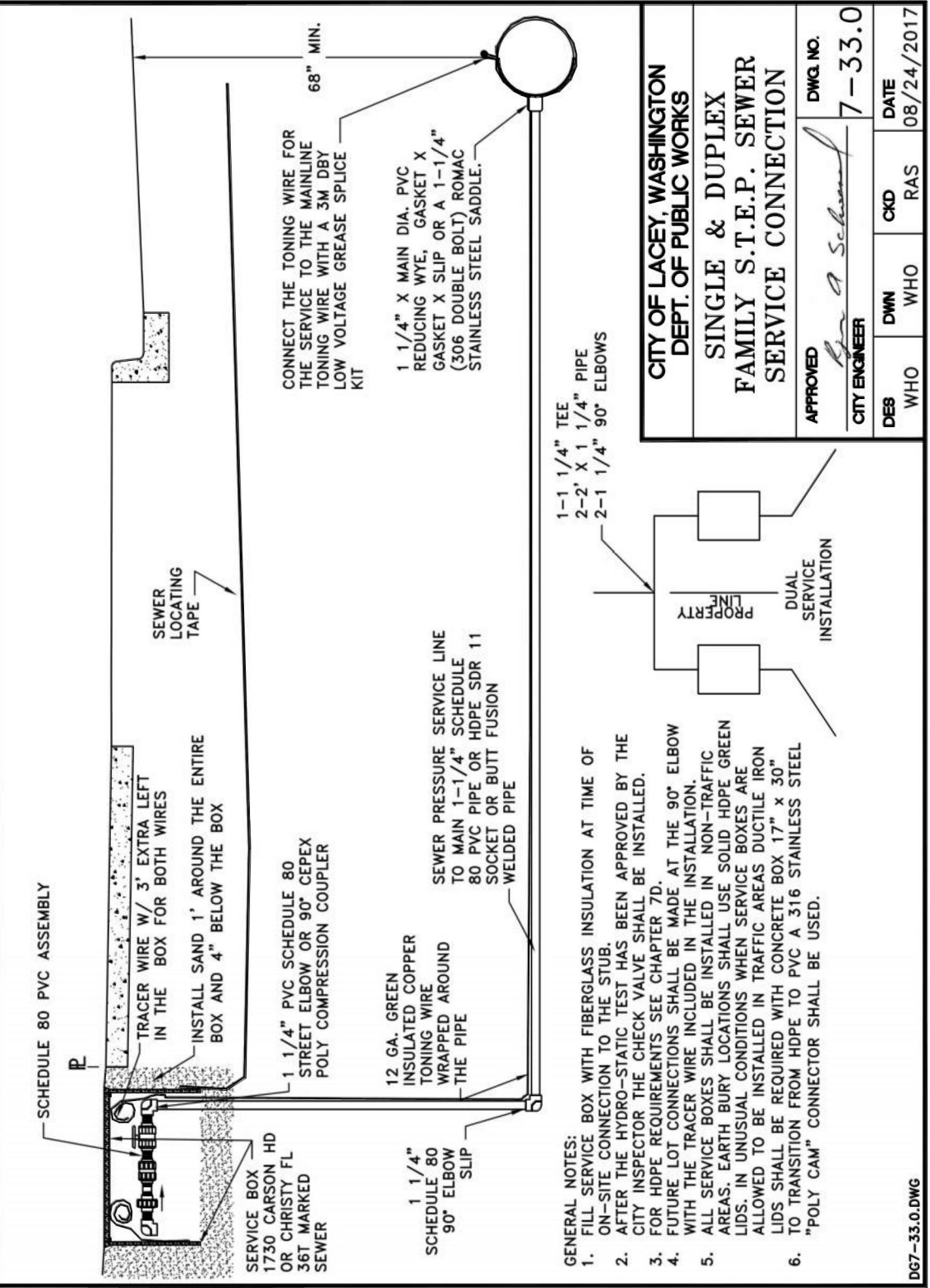
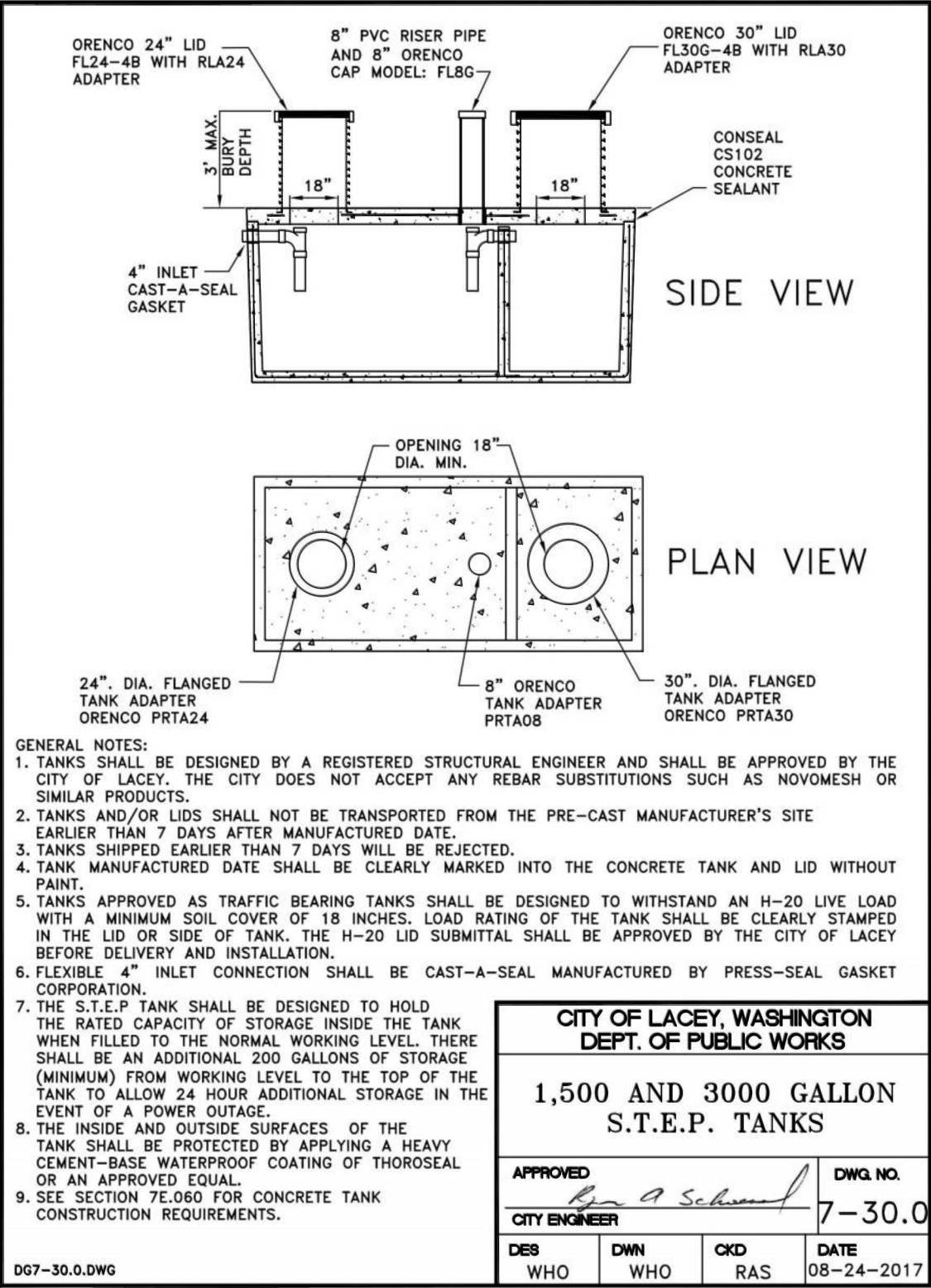
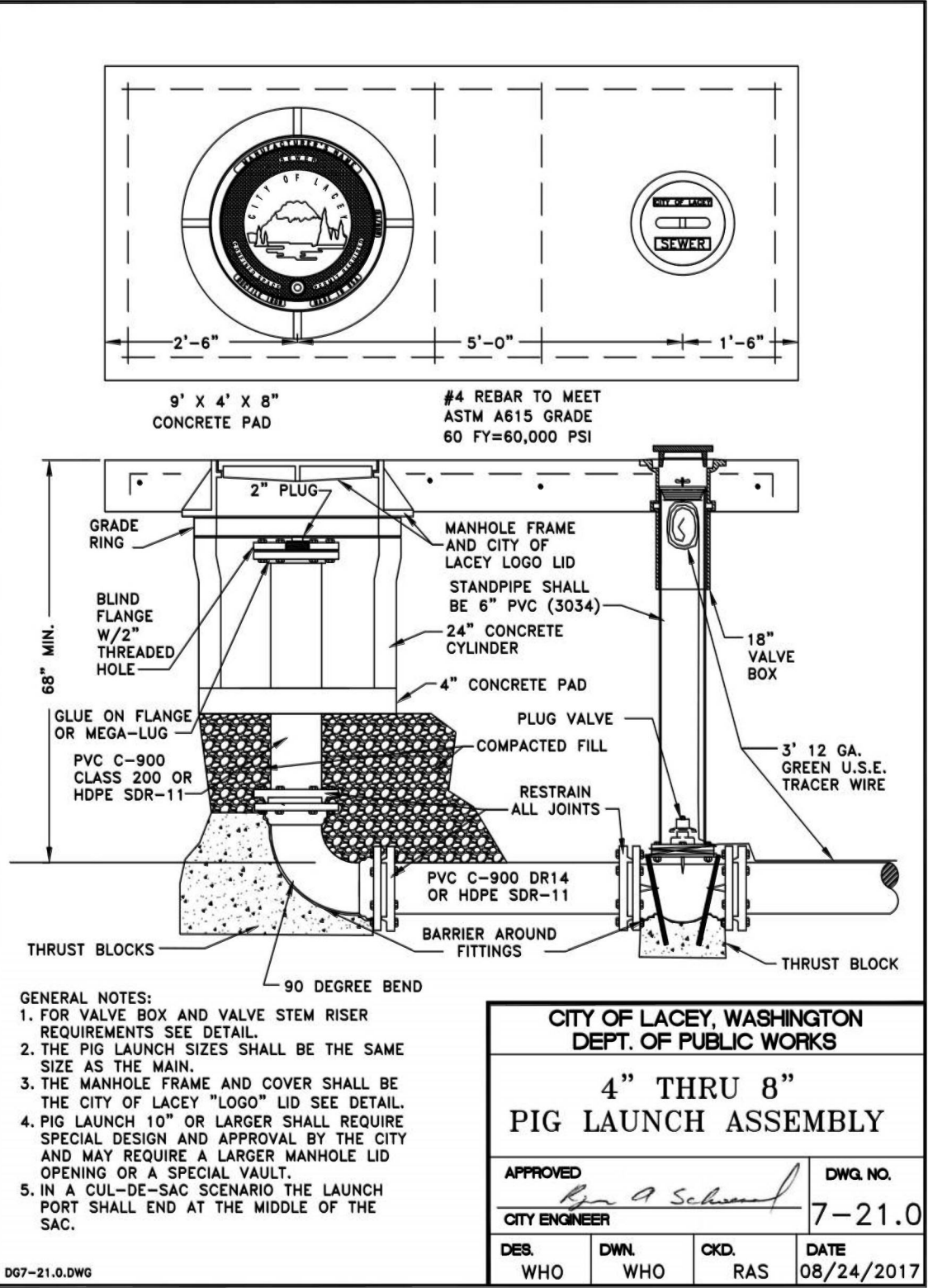
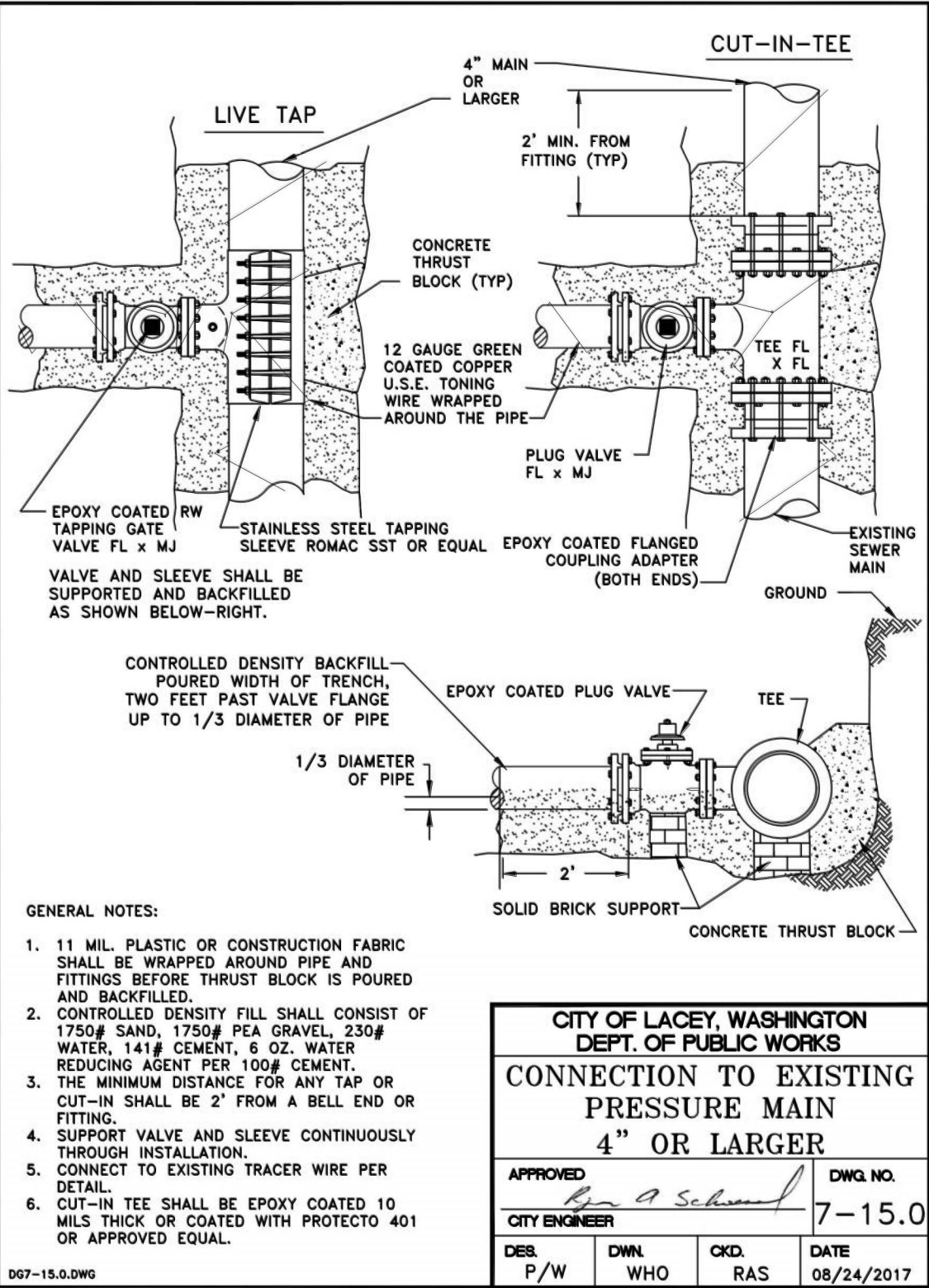
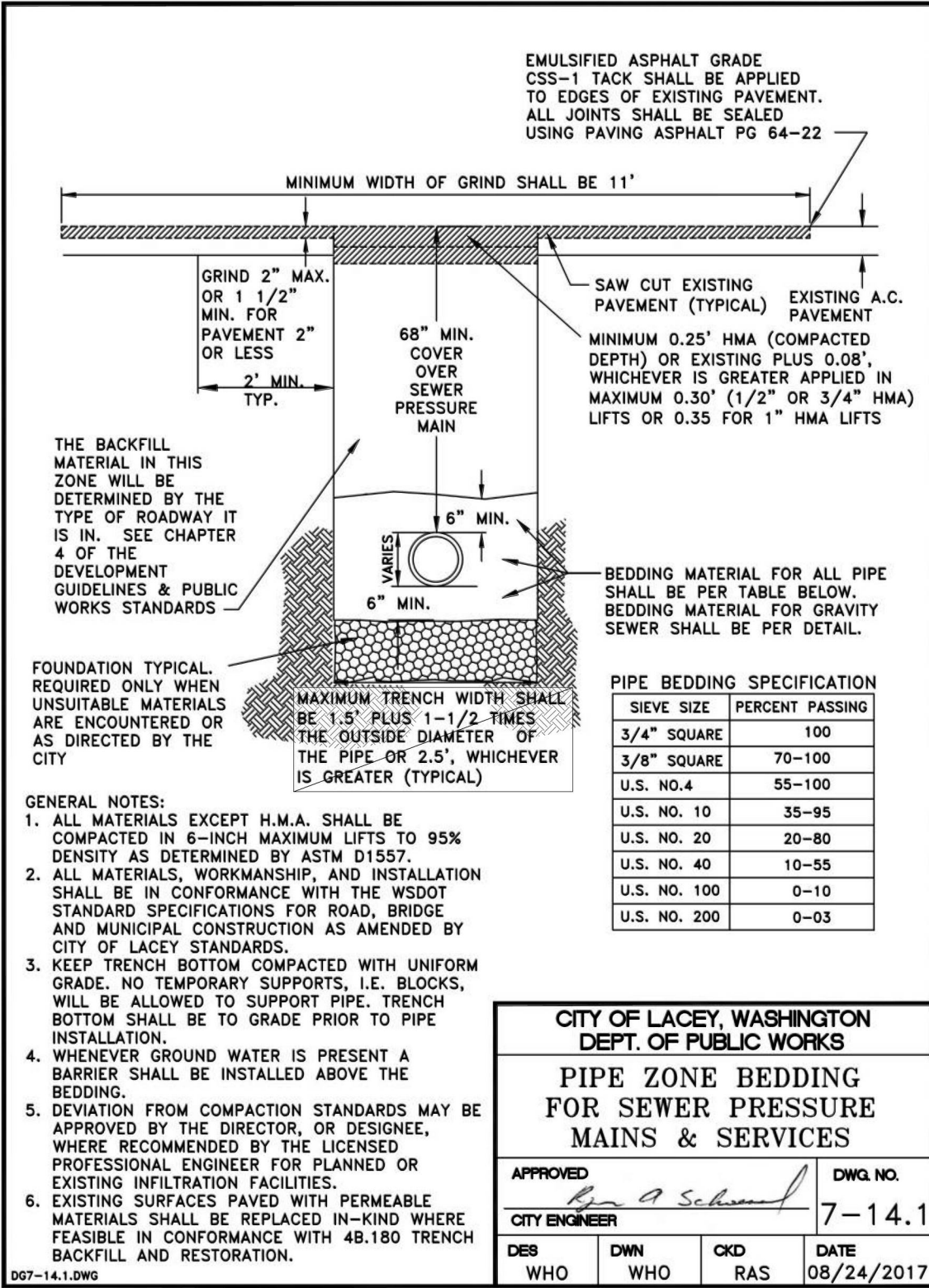




NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT, UNLESS CERTIFIED BY HATTON GODAT PANTIER.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.



DESIGNED BY: CPM/JG  
DRAWN BY: BSN  
CHECKED BY: CPM  
DATE: SEPTEMBER 2022  
SCALE: H N/A  
V N/A

07/10/2023

HATTON GODAT PANTIER

ENGINEERS AND SURVEYORS

3910 MARTIN WAY E. SUITE B  
OLYMPIA, WA 98506  
TEL: 360.943.1599 FAX: 360.357.6299  
haddonpantier.com

REVISIONS:

COUNTY COMMENTS 06/21/23

THE ENCLAVE AT OAK TREE  
LACEY, WA

PRELIMINARY  
UTILITY DETAILS - 3

A PORTION OF THE SW & SE 1/4 OF THE SE 1/4 OF SECTION 23 AND A PORTION OF THE NE 1/4 OF THE SE 1/4 OF SECTION 24 ALL IN TOWNSHIP 36N, RANGE 12W, N.M.

TP# 11823430100, 11826110000 & 11826110300

AGENCY NO. 2022100898  
SHEET: 12 OF 12  
H:\DGN\21-000\21-088\PRELIMINARY  
INDEX: 21-088\_pre det.dwg  
JOB: 21-088