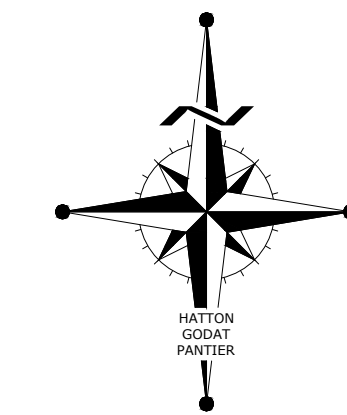


MOREL MEADOWS

8322 STEILACOOM RD SE, LACEY, WA 98513

PROJECT PROPONENT

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

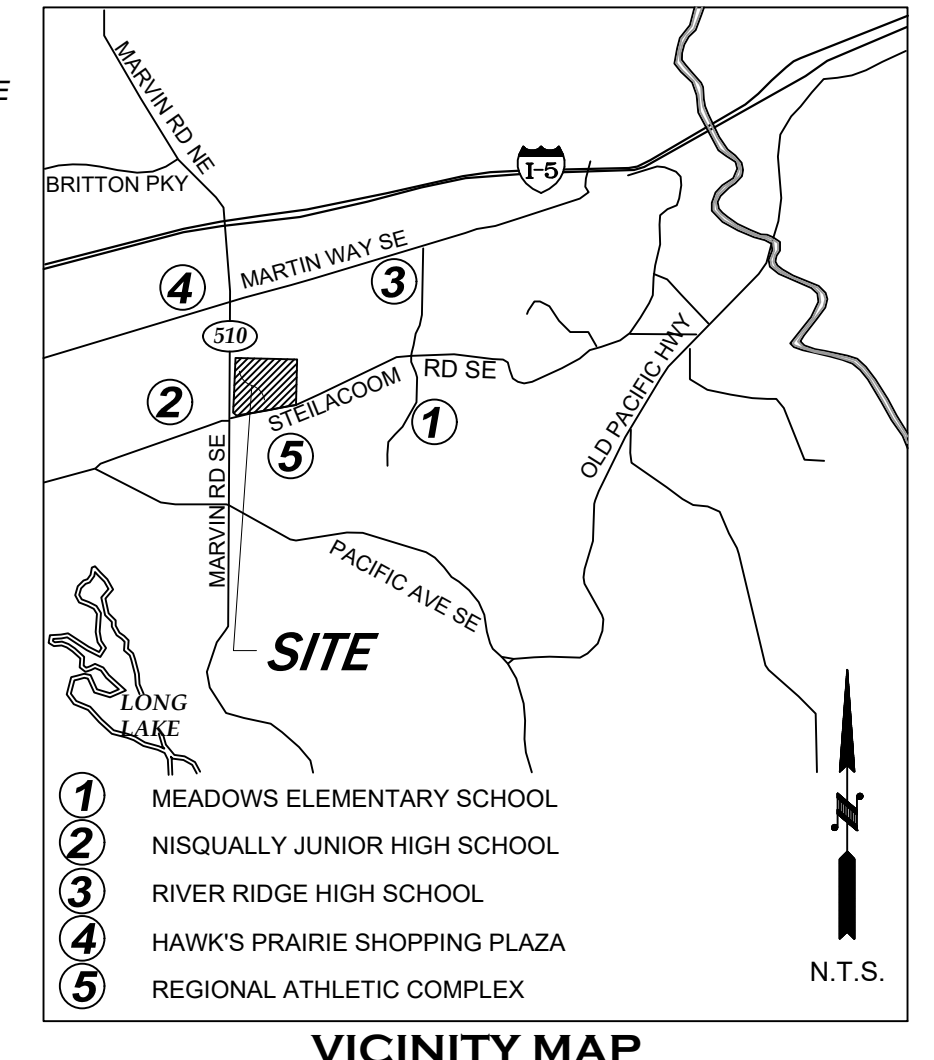


| CITY OF LACEY | |
|--|---|
| VERTICAL DATUM - NAVD 29 THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK CONTROL POINT NO. LACEY RAO 3" T.C. BRASS CAP CENTER OF 12" WIDE CONCRETE CURB CENTER OF NORTH END OF ROUNDABOUT, CENTER OF ACCESS ROAD, 570' SOUTH OF STEILACOOM ROAD ELEV. = 231.926 | MERIDIAN HORIZONTAL DATUM THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK BASED ON CONTROL POINT NO. GP-3510-59 AND POINT NO. 7512. BEARING BETWEEN SAID POINTS EQUALS N29°22'41"E AND CITY OF LACEY BASED ON SURVEY REFERENCE NO. 17 |

| | | | |
|-----------------|-----|-----------------|-----------------|
| DESIGNED BY: JG | BSN | CPM | N/A |
| DRAWN BY: BSN | CPM | DATE: JUNE 2023 | SCALE: 1" = 80' |
| CHECKED BY: JG | CPM | | |

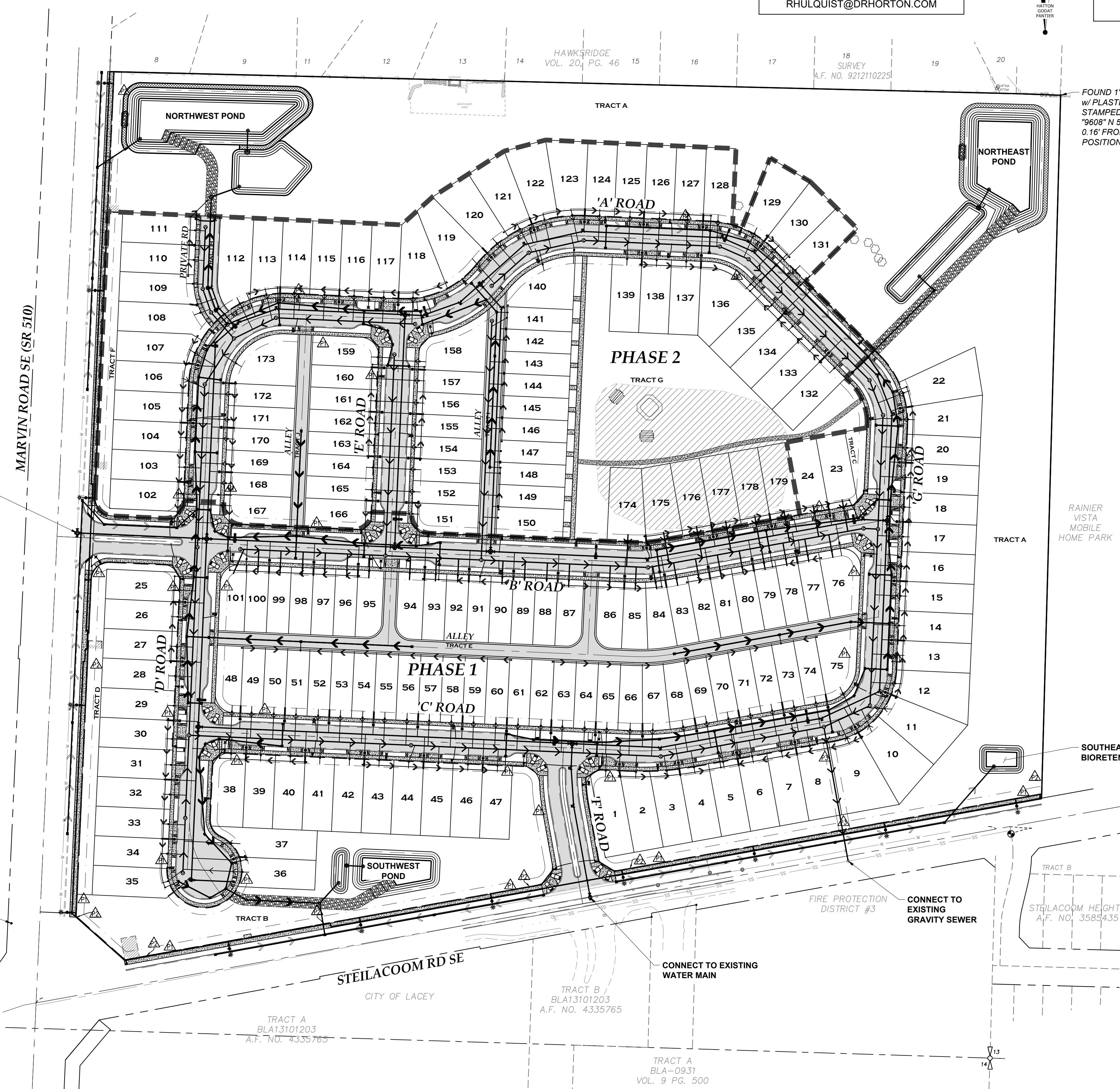
SHEET INDEX

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



SITE DATA

| | |
|-----------------------------|---------------------------|
| ASSESSOR PARCEL NO.'S | 11814140500, 11813220300 |
| TOTAL AREA | 32.08 Acres |
| ZONING | LD 3-6 |
| LENGTH OF ROADS | 4,422 L.F. |
| AREA OF ROADS | 262,837 S.F. (6.03 Acres) |
| LENGTH OF PRIVATE ST/ALLEYS | 1,755 L.F. |
| AREA OF PRIVATE ST/ALLEYS | 37,395 S.F. (0.86 Acres) |
| NO. LOTS | 179 |
| DENSITY | 5.58 DU/AC |
| SMALLEST LOT AREA | 2,700 S.F. |
| OPEN SPACE | 10.40 ACRES (32.4%) |
| SEWER | CITY OF LACEY |
| WATER | CITY OF LACEY |



FOUND WSDOT 3" BRASS DISC. NO. GP 34510-59 (THURSTON COUNTY HIGH PRECISION SURVEY CONTROL POINT NO. GP-34510-59).

FOUND 1" IRON PIPE w/ PLASTIC CAP STAMPED "9608" N 52°44'39" E 0.16' FROM CALC POSITION

RAINIER VISTA MOBILE HOME PARK

FIRE PROTECTION DISTRICT #3

CONNECT TO EXISTING GRAVITY SEWER

CONNECT TO EXISTING WATER MAIN

TRACT A BLA-0931 VOL. 9 PG. 500

TRACT B BLA13101203 A.F. NO. 4335765

TRACT A BLA13101203 A.F. NO. 4335765

LEGEND

| | |
|--|-------------------------------|
| | EX. LARGE OAK TO PRESERVE |
| | EX. DECIDUOUS TREE |
| | EX. CONIFER TREE |
| | EX. SANITARY SEWER MANHOLE |
| | EX. STORM MANHOLE |
| | EX. CATCH BASIN |
| | EX. CABLE TELEVISION PEDISTAL |
| | EX. SERVICE POLE |
| | EX. POWER POLE |
| | EX. GUY WIRE |
| | EX. SIGN |
| | EX. WATER VALVE |
| | EX. WATER WELL |
| | EX. MONITOR WELL |
| | EX. 4" BOLLARD |
| | EX. FIRE HYDRANT |
| | EX. WATER VALVE COVER/LID |
| | EX. UNDERGROUND UTILITIES |
| | EX. BOARD FENCE |
| | EX. CHAINLINK FENCE |
| | EX. EDGE OF GRAVEL |
| | EX. EDGE OF WOODED AREA |
| | EX. MAJOR CONTOUR |
| | EX. MINOR CONTOUR |
| | FINISH MAJOR CONTOUR |
| | FINISH MINOR CONTOUR |
| | NEW WATER LINE |
| | NEW STORM LINE |
| | NEW ROOF DRAIN LINE |
| | NEW SEWER LATERAL LINE |
| | NEW SEWER FORCEMAIN |
| | NEW FIRE HYDRANT |
| | NEW WATER METER |
| | NEW GATE VALVE |
| | NEW BLOWOFF ASSEMBLY |
| | NEW BLOCKING |
| | NEW SEWER MANHOLE |
| | NEW SEWER CLEAN OUT |
| | NEW CATCH BASIN, TYPE 1 |
| | NEW CB TYPE 1 W/ SOLID LID |
| | NEW CATCH BASIN, TYPE 2 |
| | NEW CB TYPE 2 W/ SOLID LID |
| | NEW STORM CLEAN OUT |
| | NEW PEDESTRIAN PATH |
| | DIESEL IMPACTED PLUME |

PLAT EASEMENTS

| | |
|--|-----------------------------------|
| | PLANNED 10' WIDE UTILITY EASEMENT |
| | PLANNED RIGHT-OF-WAY DEDICATION |
| | PLANNED SANITARY SEWER EASEMENT |

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).

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.

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.

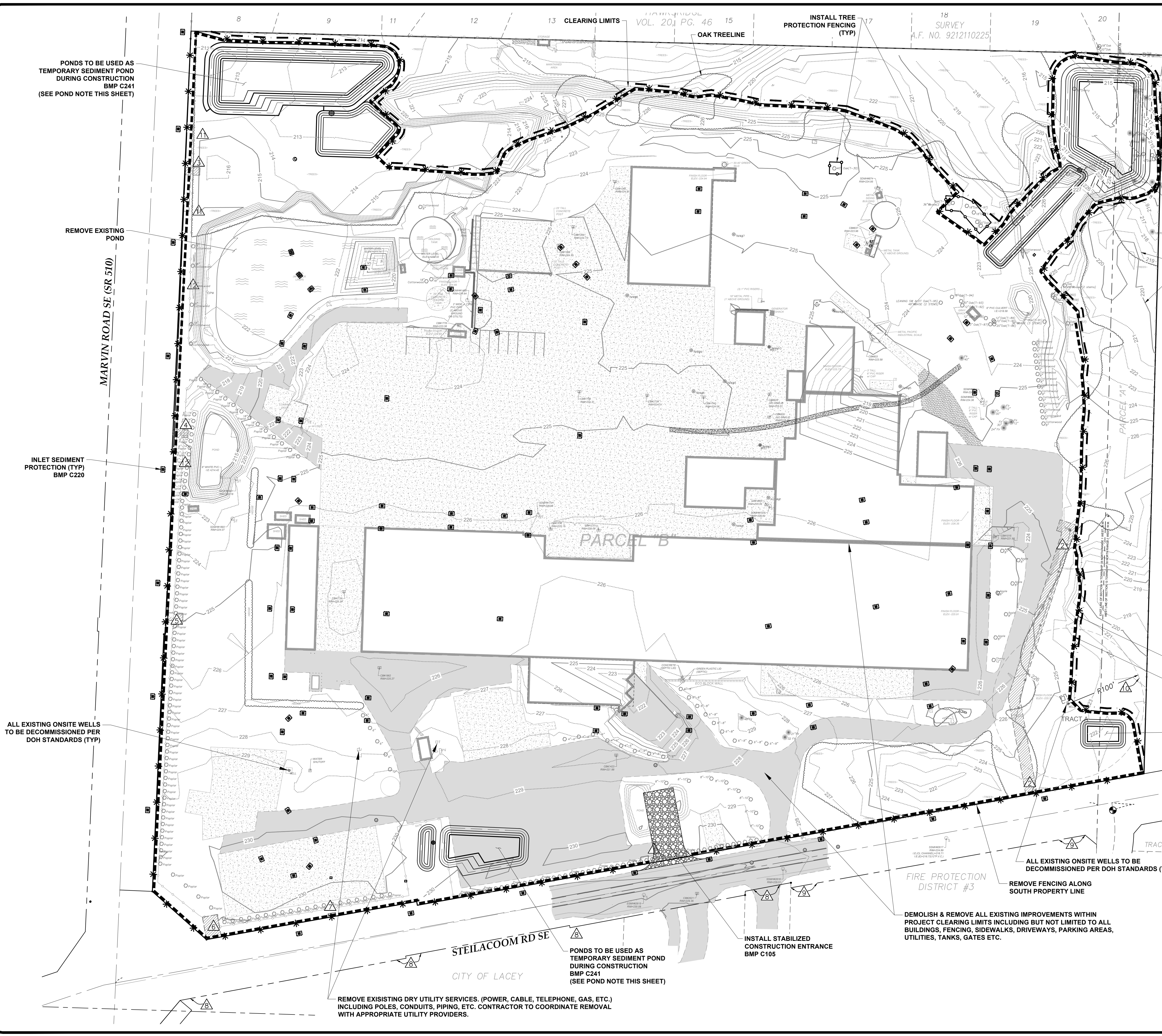
PH: 11814140500, 11813220300
MOREL MEADOWS
8322 STEILACOOM RD SE, LACEY, WA 98513
PRELIMINARY COVER SHEET

AGENCY NO. HTE-22-0135
SHEET: 1 OF 12
H:\DGN\21-000\21-100\PRELIMINARY
INDEX: 21-100-pre-cov
JOB: 21-100

DATE: _____
REVISIONS: _____

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



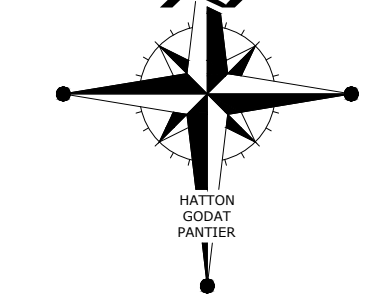


CITY OF LACEY

VERTICAL DATUM - NAVD 29
 THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK CONTROL POINT NO. LACEY RAO 3" T.C. BRASS CAP CENTER OF 12" WIDE CONCRETE CURB CENTER OF NORTH END OF ROUNDABOUT, CENTER OF ACCESS ROAD, 570' SOUTH OF STEILACOOM ROAD
 ELEV. = 231.926

MERIDIAN HORIZONTAL DATUM
 THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK BASED ON CONTROL POINT NO. GP-3510-59 AND POINT NO. 7512. BEARING BETWEEN SAID POINTS EQUALS N29°22'41"E AND CITY OF LACEY BASED ON SURVEY REFERENCE NO. 17

SCALE: 1" = 60'



LEGEND

| | |
|--|---------------------------|
| | CLEARING LIMITS |
| | TREE PROTECTION FENCING |
| | SILT FENCING |
| | STRAW WATTLES |
| | INLET SEDIMENT PROTECTION |
| | MONITORING WELL LOCATIONS |

PONDS TO BE USED AS TEMPORARY SEDIMENT POND DURING CONSTRUCTION
 BMP C241
 (SEE POND NOTE THIS SHEET)

EXISTING CONTOURS (TYP)

RAINIER VISTA MOBILE HOME PARK

INSTALL SILT FENCING (TYP)
 BMP C103 / BMP C233

INSTALL STRAW WATTLES ALONG WEST, NORTH, AND EAST PROPERTY LINES
 BMP C235

PONDS TO BE USED AS TEMPORARY SEDIMENT POND DURING CONSTRUCTION
 BMP C241
 (SEE POND NOTE 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:
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- EXISTING EASEMENTS**
- 1 EASEMENT GRANTED TO PUGET SOUND ENERGY, INC. RECORDED UNDER AUDITOR'S FILE NO. 4008833
 - 2 UTILITY EASEMENT GRANTED TO CITY OF LACEY FOR WATERMAIN RECORDED UNDER AUDITOR'S FILE NO. 9305120281
 - 3 EASEMENT GRANTED TO PUGET SOUND ENERGY, INC. RECORDED UNDER AUDITOR'S FILE NO. 3428267 (EASEMENT NO. 1)
 - 4 EASEMENT GRANTED TO PUGET SOUND ENERGY, INC. RECORDED UNDER AUDITOR'S FILE NO. 3428267 (EASEMENT NO. 2)
 - 5 EASEMENT GRANTED TO PUGET SOUND ENERGY, INC. RECORDED UNDER AUDITOR'S FILE NO. 3428267
 - 6 EASEMENT GRANTED TO PUGET SOUND ENERGY, INC. RECORDED UNDER AUDITOR'S FILE NO. 3428268
 - 7 EASEMENT GRANTED TO PUGET SOUND POWER & LIGHT COMPANY RECORDED UNDER AUDITOR'S FILE NO. 9206100190
 - 8 RIGHT OF WAY BASED ON SURVEY REFERENCE NO.'S 3, 6, & 10
 - 9 SOUTH LINE RIGHT OF WAY DESCRIBED IN DEED RECORDED UNDER AUDITOR'S FILE NO. 4890335
 - 10 DECLARATION OF COVENANT FOR PUBLIC WATER SUPPLY RECORDED UNDER AUDITOR'S FILE NO. 3965248
 - 11 SLOPE EASEMENT GRANTED TO STATE OF WASHINGTON RECORDED UNDER AUDITOR'S FILE NO. 3387638
 - 12 SLOPE EASEMENT GRANTED TO STATE OF WASHINGTON RECORDED UNDER AUDITOR'S FILE NO. 3343190

POND NOTE:
 INFILTRATION PONDS TO BE EXCAVATED A MINIMUM OF 2' ABOVE DESIGN BOTTOM DURING CONSTRUCTION. WHEN THE SITE HAS BEEN FULLY STABILIZED THE PONDS SHALL BE EXCAVATED TO DESIGN BOTTOM REMOVING SEDIMENT AND MUCK ACCUMULATION FROM CONSTRUCTION.

PONDS TO BE USED AS TEMPORARY SEDIMENT POND DURING CONSTRUCTION
 BMP C241
 (SEE POND NOTE THIS SHEET)

REMOVE EXISTING POND

INLET SEDIMENT PROTECTION (TYP)
 BMP C220

ALL EXISTING ONSITE WELLS TO BE DECOMMISSIONED PER DOH STANDARDS (TYP)

PONDS TO BE USED AS TEMPORARY SEDIMENT POND DURING CONSTRUCTION
 BMP C241
 (SEE POND NOTE THIS SHEET)

REMOVE EXISTING DRY UTILITY SERVICES. (POWER, CABLE, TELEPHONE, GAS, ETC.) INCLUDING POLES, CONDUITS, PIPING, ETC. CONTRACTOR TO COORDINATE REMOVAL WITH APPROPRIATE UTILITY PROVIDERS.

INSTALL STABILIZED CONSTRUCTION ENTRANCE
 BMP C105

REMOVE FENCING ALONG SOUTH PROPERTY LINE

DEMOLISH & REMOVE ALL EXISTING IMPROVEMENTS WITHIN PROJECT CLEARING LIMITS INCLUDING BUT NOT LIMITED TO ALL BUILDINGS, FENCING, SIDEWALKS, DRIVEWAYS, PARKING AREAS, UTILITIES, TANKS, GATES ETC.

DESIGNED BY: JG
 DRAWN BY: BSN
 CHECKED BY: CPM
 DATE: JUNE 2023
 SCALE: 1" = 60'



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

DATE: _____
 REVISIONS: _____

MOREL MEADOWS
 8322 STEILACOOM RD SE, LACEY, WA 98513
 PRELIMINARY DEMOLITION & EROSION & SEDIMENT CONTROL PLAN

TP# 11814140600, 1181322000

A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 16 NORTH RANGE 1 WEST, W.M.

AGENCY NO. HTE-22-0135
 SHEET: 2 OF 12
 H:\DGN\21-000\21-100\PRELIMINARY
 INDEX: 21-100 pre-ec
 JOB: 21-100

CITY OF LACEY STANDARD CONSTRUCTION SWPPP NOTES:

- SITE INSPECTIONS SHALL BE CONDUCTED BY A PERSON WHO IS KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROL. FOR PROJECT SITES THAT REQUIRE A CONSTRUCTION SWPPP, A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (GESCL) SHALL BE IDENTIFIED IN THE CONSTRUCTION SWPPP AND SHALL BE ON SITE OR ON CALL AT ALL TIMES.
- APPROVAL OF THE CONSTRUCTION SWPPP DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION/DETENTION/FILTRATION FACILITIES, UTILITIES, ETC.).
- THE IMPLEMENTATION OF THE CONSTRUCTION SWPPP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE CONSTRUCTION SWPPP FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
- THE CLEARING LIMIT BOUNDARIES SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- THE CONSTRUCTION SWPPP FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE STANDARDS FOR SURFACE WATER QUALITY, GROUNDWATER QUALITY, OR SEDIMENT QUALITY.
- THE CONSTRUCTION SWPPP FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE CONSTRUCTION SWPPP FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE DURING THE COURSE OF CONSTRUCTION, INCLUDING CONSTRUCTION IN INDIVIDUAL LOTS.
- THE CONSTRUCTION SWPPP FACILITIES ON ACTIVE SITES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR. THE FACILITIES SHALL BE MAINTAINED, REPAIRED, OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
- THE CONSTRUCTION SWPPP FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AT LEAST MONTHLY AND WITHIN 48 HOURS FOLLOWING A MAJOR STORM EVENT (>1" RAINFALL IN 24 HOURS) BY THE APPLICANT/CONTRACTOR. THE FACILITIES SHALL BE MAINTAINED, REPAIRED, OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
- STORM DRAIN INLETS OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF DOES NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT. AT NO TIME SHALL MORE THAN 1 FOOT OF 1/2 OF THE BMP VOLUME (WHICHEVER IS LESS) OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A STORM DRAIN INLET PROTECTION BMP. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED AS PART OF PROJECT COMPLETION AND ACCEPTANCE. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
- STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- ROADS SHALL BE INSPECTED DAILY AND CLEANED THOROUGHLY AS NEEDED TO PROTECT DOWNSTREAM WATER RESOURCES OR STORMWATER INFRASTRUCTURE. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- FROM OCTOBER 1 THROUGH APRIL 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS. SOILS SHALL BE STABILIZED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. LINEAR CONSTRUCTION ACTIVITIES, SUCH AS RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL COMPLY WITH THESE REQUIREMENTS. THESE STABILIZATION REQUIREMENTS APPLY TO ALL SOILS ON SITE, WHETHER AT FINAL GRADE OR NOT. THE CITY OF LACEY MAY DECREASE THESE TIME LIMITS IF IT CAN BE SHOWN THAT A DEVELOPMENT SITE'S EROSION OR RUNOFF POTENTIAL JUSTIFIES A DIFFERENT STANDARD.
- CONTACT THE CITY FOR APPROVAL PRIOR TO ALL CLEARING, GRADING, AND OTHER SOIL-DISTURBING ACTIVITIES THAT OCCUR BETWEEN OCTOBER 1 AND APRIL 30. SUCH WORK SHALL ONLY BE PERMITTED IF SHOWN TO THE SATISFACTION OF THE CITY THAT THE TRANSPORT OF SEDIMENT FROM THE CONSTRUCTION SITE TO RECEIVING WATERS WILL BE PREVENTED. THE CITY MAY REQUIRE SUPPLEMENTAL SWPPP DOCUMENTATION FOR WET SEASON WORK.
- SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED FROM EROSION.
- HANDLE AND DISPOSE OF ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS THAT OCCUR ON SITE IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER. WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON SITE.
- USE SPILL PREVENTION MEASURES, SUCH AS DRIP PANS, WHEN CONDUCTING MAINTENANCE AND REPAIR OF VEHICLES AND EQUIPMENT.
- REPORT SPILLS MONDAY THROUGH FRIDAY, 7:00 A.M. TO 3:30 P.M. (360) 491-5644. AFTER HOURS, YOU CAN LEAVE A VOICEMAIL AT THE NUMBER ABOVE, OR SELECT THE OPTION TO BE CONNECTED TO THURSTON COUNTY CENTRAL DISPATCH, WHO WILL NOTIFY THE CITY'S STAND-BY SPILL RESPONSE STAFF

CITY OF LACEY PUBLIC WORKS, 2017 DEVELOPMENT GUIDELINES
CHAPTER 5, STORM DRAINAGE
08/2017

CONSTRUCTION SEQUENCE:

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

CONCRETE HANDLING NOTES: BMP C151

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

SAW CUTTING AND SURFACING POLLUTION PREVENTION NOTES: BMP C152

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

EROSION CONTROL SEEDING NOTES: BMP C120

- 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.
- SEED BEDS PLANTED BETWEEN MAY 1 AND OCTOBER 31 WILL REQUIRE IRRIGATION AND OTHER MAINTENANCE AS NECESSARY TO FOSTER AND PROTECT THE ROOT STRUCTURE.
- 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).
- BEFORE SEEDING, INSTALL NEEDED SURFACE RUNOFF CONTROL MEASURES SUCH AS GRADIENT TERRACES, INTERCEPTOR DIKES, SWALES, LEVEL SPREADERS AND SEDIMENT BASINS.
- 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.
- FERTILIZERS ARE TO BE USED ACCORDING TO SUPPLIERS RECOMMENDATIONS. AMOUNTS USED SHOULD BE MINIMIZED, ESPECIALLY ADJACENT TO WATER BODIES AND WETLANDS.

MULCH NOTES: BMP C121

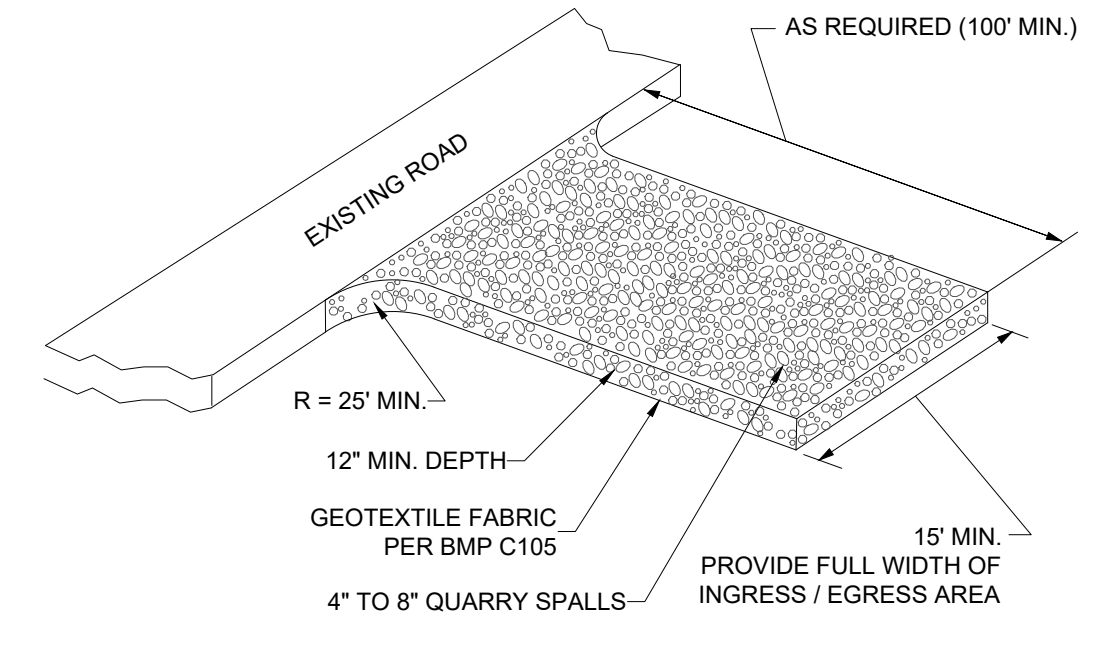
- MULCH MATERIALS USED SHALL BE HAY OR STRAW, AND SHALL BE APPLIED AT THE RATE OF 2 - 3 TONS / ACRE OR OTHER WOOD FIBER CELLULOSE MATERIAL TO BE APPLIED AT THE RATE OF APPROXIMATELY 100 TONS / ACRE.
- MULCHES SHALL BE APPLIED IN ALL AREAS WITH EXPOSED SOILS.
- MULCHING SHALL BE USED IMMEDIATELY AFTER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

FILL AREA STABILIZATION:

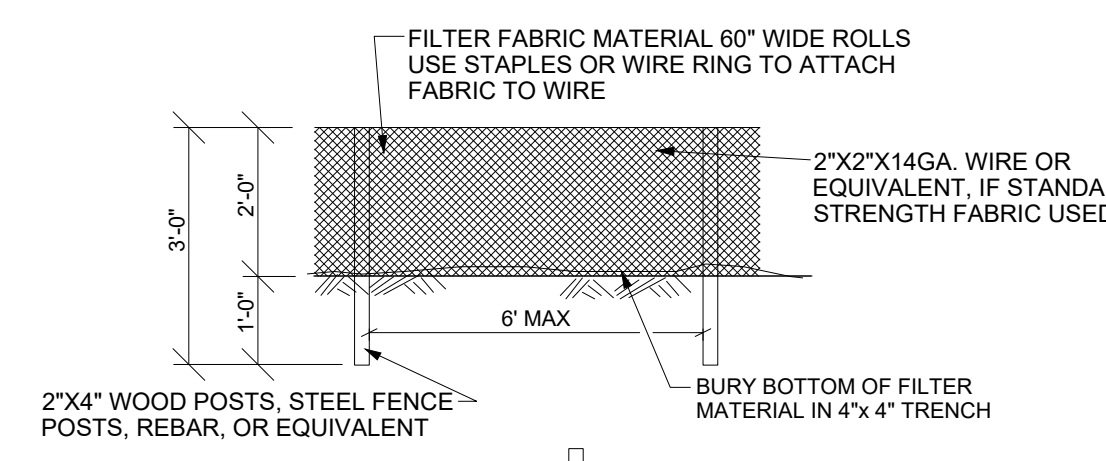
- ALL FILL AREA SLOPES SHALL BE ROUGHENED USING ONE OF THE METHODS FROM BMP C130 AS FILL IS BEING PLACED.
- ALL DISTURBED AREAS SHALL BE SEEDING AND MULCHED PER THE NOTES AND DETAILS IN THIS PLAN SET AND PER BMP'S C120 AND C121.
- IN NO CASE SHALL DISTURBED SOILS REMAIN UNSTABILIZED AND UNWORKED FOR 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)

MAINTENANCE OF EROSION CONTROL FACILITIES:

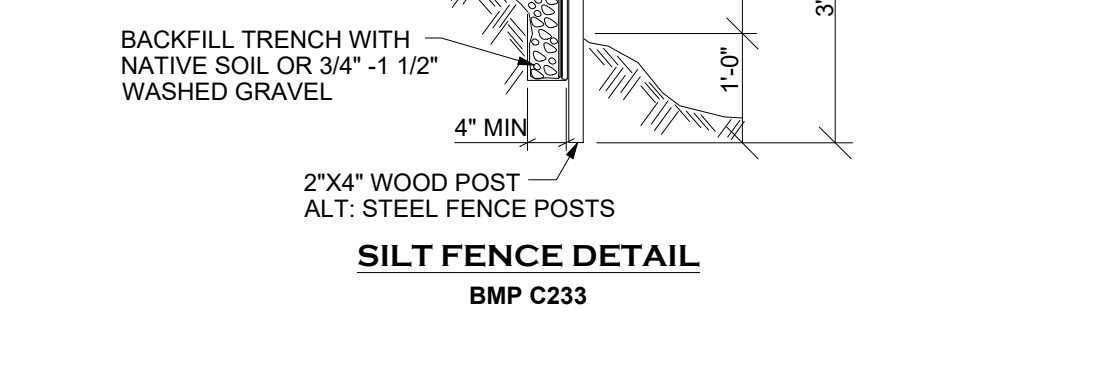
- IN GENERAL, ALL BMP'S SHALL BE CHECKED WEEKLY AND AFTER A SIGNIFICANT RAINFALL (MORE THAN APPROXIMATELY 0.5 INCHES IN 24 HOURS). THE FOLLOWING ITEMS SHALL BE CHECKED IN PARTICULAR:
- SEDIMENT BASINS SHALL BE CLEANED OUT WHEN THE LEVEL OF SEDIMENT REACHES 1-1/2 FEET FROM THE TOP OF THE RISER PIPE.
 - 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.
 - 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.
 - PIPE SLOPE DRAINS SHALL BE CHECKED FOR STABILITY. NO UNDERMINING OF THE PIPE SHALL BE ALLOWED.
 - FILTER FENCE SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP. SEDIMENT SHALL BE REMOVED ONCE IT REACHES A DEPTH OF 1-FOOT.
 - EROSION CONTROL BLANKETS SHALL BE CHECKED FOR STABILITY. BLANKETS SHALL BE HELD IN PLACE AND HAVE GOOD CONTACT WITH THE FILL SLOPE AT ALL TIMES.
 - ALL SEEDING AND SODDED AREAS, ESPECIALLY FILL SLOPES, SHALL BE CHECKED REGULARLY TO MAKE SURE VEGETATIVE COVERAGE IS COMPLETE. AREAS SHALL BE RESEEDING AND FERTILIZED AS NEEDED.
 - TRACKING OF MUD OFF-SITE WILL NOT BE ALLOWED. IF EXCESSIVE MUD IS TRACKED OFF-SITE, IT SHALL BE CLEANED WITH A STREET SWEEPER. FURTHER TRACKING SHALL THEN BE PREVENTED BY WASHING TRUCK TIRES OR SWEEPING CONTINUOUSLY.



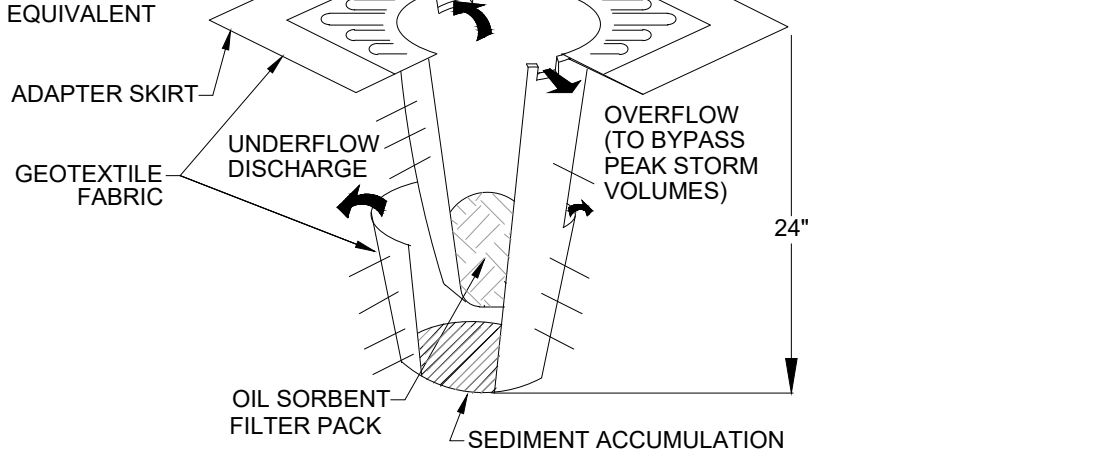
**STABILIZED CONSTRUCTION ENTRANCE
BMP C105**



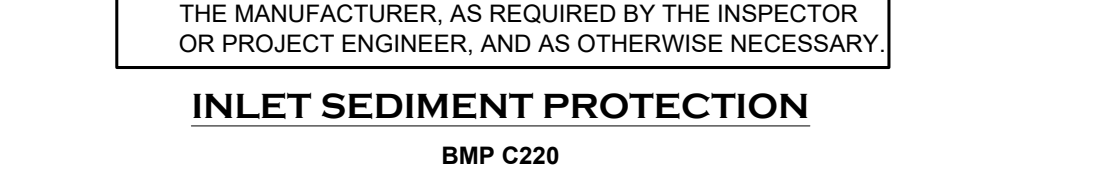
**SILT FENCE DETAIL
BMP C233**



**INLET SEDIMENT PROTECTION
BMP C220**



**TRACK WALKING
BMP C130**



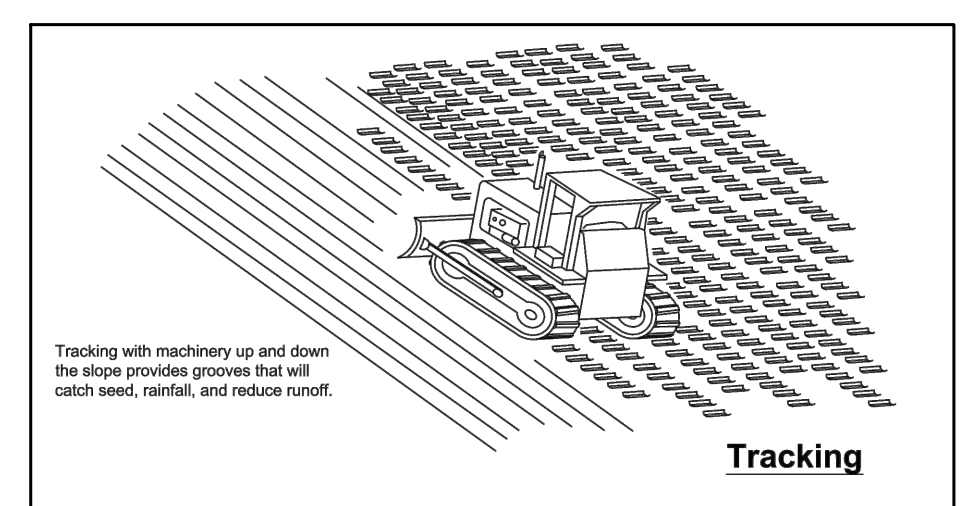
**HIGH VISIBILITY / CLEARING LIMITS FENCING
BMP C103**

STABILIZED CONSTRUCTION ENTRANCE NOTES: BMP C105

- MATERIAL SHALL BE 4 INCH TO 8 INCH QUARRY SPALLS AND MAY BE TOP-DRESSED WITH 1 INCH TO 3 INCH ROCK. (STATE STANDARD SPECIFICATIONS.)
- THE ROCK PAD SHALL BE AT LEAST 12 INCHES THICK AND 100 FEET LONG. WIDTH SHALL BE THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. SMALLER PADS MAY BE APPROVED FOR SINGLE-FAMILY RESIDENTIAL AND SMALL COMMERCIAL SITES.
- ADDITIONAL ROCK SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
- IF THE PAD DOES NOT ADEQUATELY REMOVE THE MUD FROM THE VEHICLE WHEELS, THE WHEELS SHALL BE HOSED OFF BEFORE THE VEHICLE ENTERS A PAVED STREET. THE WASHING SHALL BE DONE ON AN AREA COVERED WITH CRUSHED ROCK AND WASH WATER SHALL DRAIN TO A SEDIMENT RETENTION FACILITY OR THROUGH A SILT FENCE.

SILT FENCE NOTES: BMP C233

- FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY FASTENED AT BOTH ENDS TO POST.
- POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES).
- A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
- WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG. TIE WIRES OR HOE RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRE TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
- WHEN EXTRA-STRENGTH FILTER FABRIC AND CLOSER POST SPACING IS USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ABOVE NOTES APPLYING.
- FILTER FABRIC FENCES SHALL NOT BE REMOVED BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



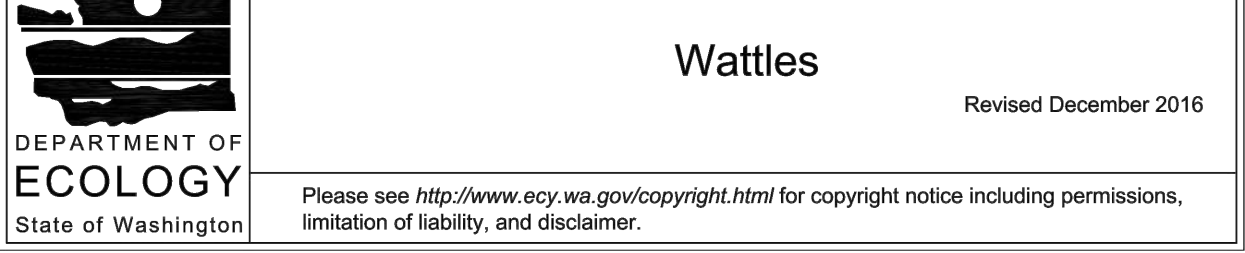
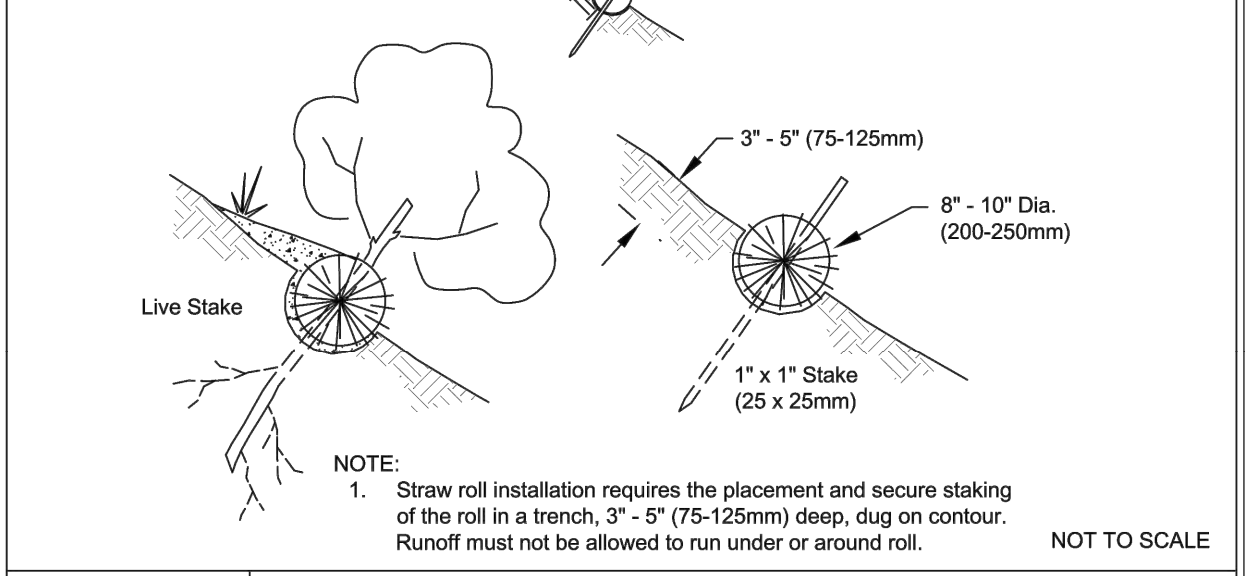
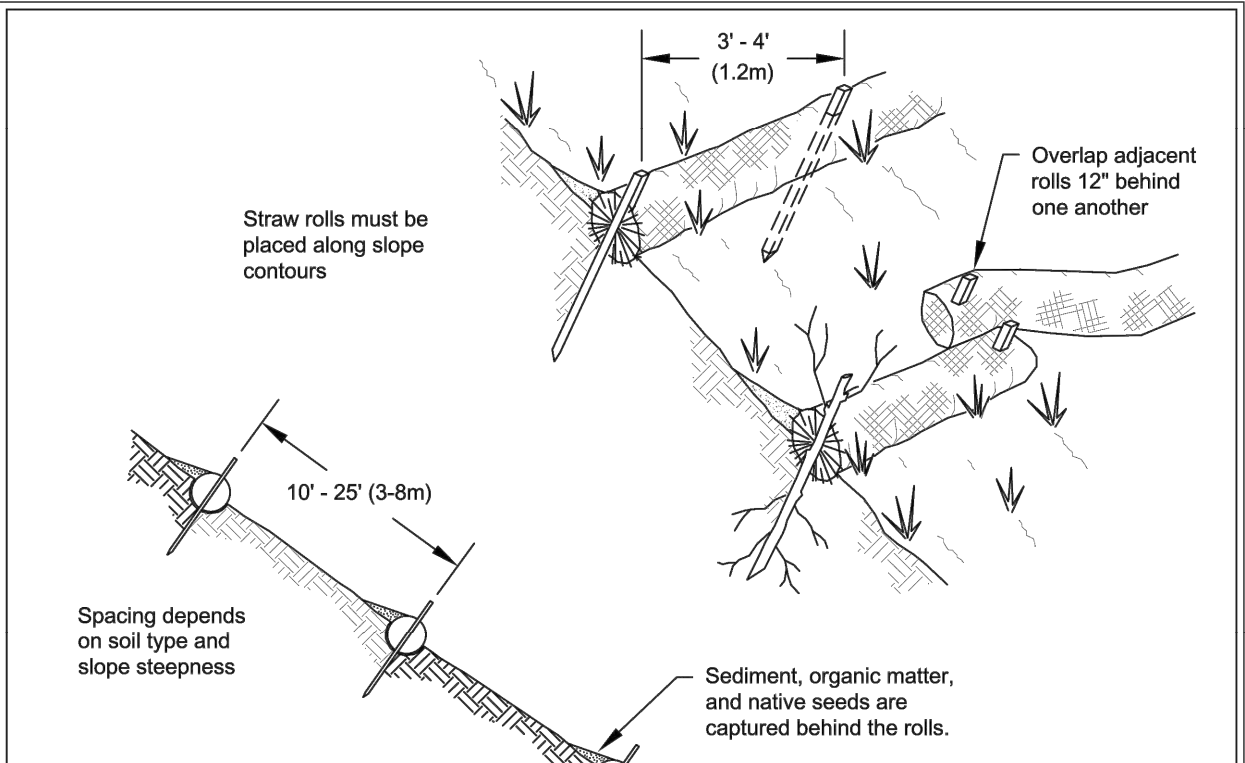
**TRACK WALKING
BMP C130**

TRACK WALKING NOTES:

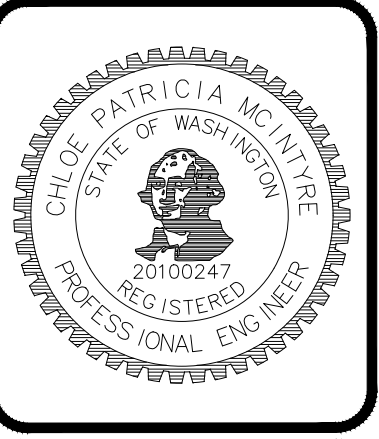
- ALL SLOPES STEEPER THAN 3:1 AND GREATER THAN 5 VERTICAL FEET SHALL BE ROUGHENED TO A DEPTH OF 2 TO 4 INCHES PRIOR TO SEEDING.

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

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



DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CFM
DATE: JUNE 2023
SCALE: N/A
V N/A



HATTON GODAT PANTIER
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haddonpantier.com

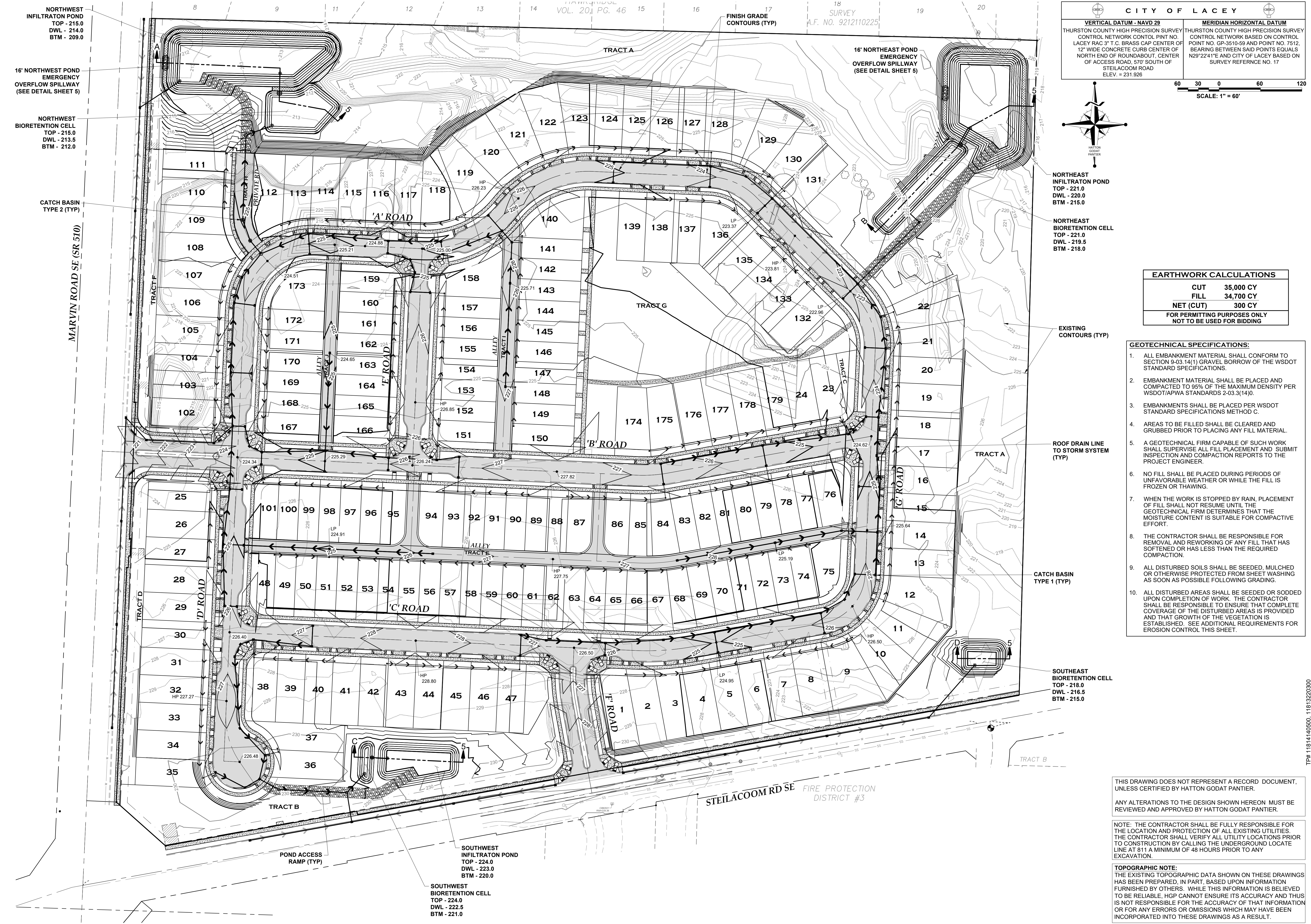
DATE:
REVISIONS:

8322 STEILACOOM RD SE, LACEY, WA 98513
MOREL MEADOWS
PRELIMINARY EROSION CONTROL DETAILS
TPR: 11814140600, 11813220300
A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 18 NORTH RANGE 1 WEST, W.M.

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.

AGENCY NO. HTE-22-0135
SHEET: 3 OF 12
H:\DGN\21-00021-100\PRELIMINARY
INDEX: 21-100 pre-det
JOB: 21-100



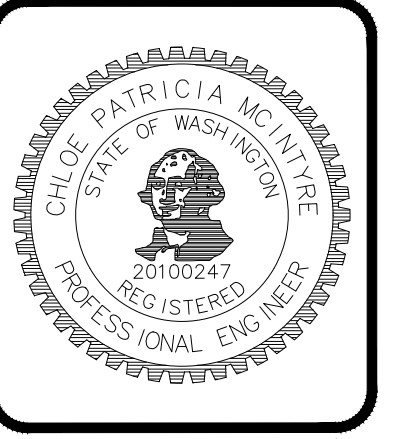
CITY OF LACEY

VERTICAL DATUM - NAVD 29
 THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK CONTROL POINT NO. LACEY RAO 3" T.C. BRASS CAP CENTER OF 12" WIDE CONCRETE CURB CENTER OF NORTH END OF ROUNDABOUT, CENTER OF ACCESS ROAD, 570' SOUTH OF STEILACOOM ROAD ELEV. = 231.926

MERIDIAN HORIZONTAL DATUM
 THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK BASED ON CONTROL POINT NO. GP-3510-59 AND POINT NO. 7512. BEARING BETWEEN SAID POINTS EQUALS N29°22'41"E AND CITY OF LACEY BASED ON SURVEY REFERENCE NO. 17

SCALE: 1" = 60'

DESIGNED BY: JG
 DRAWN BY: BSN
 CHECKED BY: CPM
 DATE: JUNE 2023
 SCALE: 1" = 60'



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 OLYMPIA, WA 98506
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 hattonpantier.com

EARTHWORK CALCULATIONS

| | |
|-----------|-----------|
| CUT | 35,000 CY |
| FILL | 34,700 CY |
| NET (CUT) | 300 CY |

FOR PERMITTING PURPOSES ONLY
 NOT TO BE USED FOR BIDDING

- 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.

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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.

TP# 118114140600, 11813220300

8322 STEILACOOM RD SE, LACEY, WA 98513

PRELIMINARY GRADING & DRAINAGE PLAN

A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 16 NORTH RANGE 1 WEST, W.M.

AGENCY NO. HTE-22-0135
 SHEET 4 OF 12
 H:\DGN\21-00021-100\PRELIMINARY
 INDEX: 21-100 pre-grd&dm
 JOB: 21-100

BIORETENTION SOIL MIX

BIORETENTION SOIL SHALL BE A WELL-BLENDED MIXTURE OF MINERAL AGGREGATE AND COMPOSTED MATERIAL MEASURED ON A VOLUME BASIS. BIORETENTION SOIL SHALL CONSIST OF TWO PARTS FINE COMPOST (APPROXIMATELY 35 TO 40 PERCENT) BY VOLUME AND THREE PARTS MINERAL AGGREGATE (APPROXIMATELY 60 TO 65 PERCENT), BY VOLUME. THE MIXTURE SHALL BE WELL BLENDED TO PRODUCE A HOMOGENEOUS MIX.

MINERAL AGGREGATE

PERCENT FINES: A RANGE OF 2 TO 4 PERCENT PASSING THE U.S. #200 SIEVE IS IDEAL AND FINES SHOULD NOT BE ABOVE 5 PERCENT.

GRADATION: THE AGGREGATE PORTION OF THE BIORETENTION SOIL MIX SHALL BE WELL GRADED STONE. ACCORDING TO ASTM D2487-98 (CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES [UNIFIED SOIL CLASSIFICATION SYSTEM]), WELL-GRADED SAND SHOULD HAVE THE FOLLOWING GRADATION COEFFICIENTS:

- COEFFICIENT OF UNIFORMITY ($C_u = (D_{60}/D_{10})$) EQUAL TO OR GREATER THAN 4.
- COEFFICIENT OF CURVE ($C_c = (D_{30})^2 / (D_{60} \times D_{10})$) GREATER THAN OR EQUAL TO 1 AND LESS THAN OR EQUAL TO 3.

AGGREGATE SHALL BE ANALYZED BY AN ACCREDITED LAB USING THE U.S. SIEVE NUMBERS AND GRADATION NOTED BELOW.

| AGGREGATE FOR BIORETENTION SOIL | |
|---------------------------------|-----------------|
| U.S. SIEVE NUMBER | PERCENT PASSING |
| 0.375 inch | 100 |
| 4 | 95-100 |
| 10 | 75-90 |
| 40 | 24-40 |
| 100 | 4-10 |
| 200 | 2-5 |

WHERE EXISTING SOILS MEET THE ABOVE AGGREGATE GRADATION, THOSE SOILS MAY BE AMENDED RATHER THAN IMPORTING MINERAL AGGREGATE.

COMPOST TO AGGREGATE RATIO, ORGANIC MATTER CONTENT, CATION EXCHANGE CAPACITY

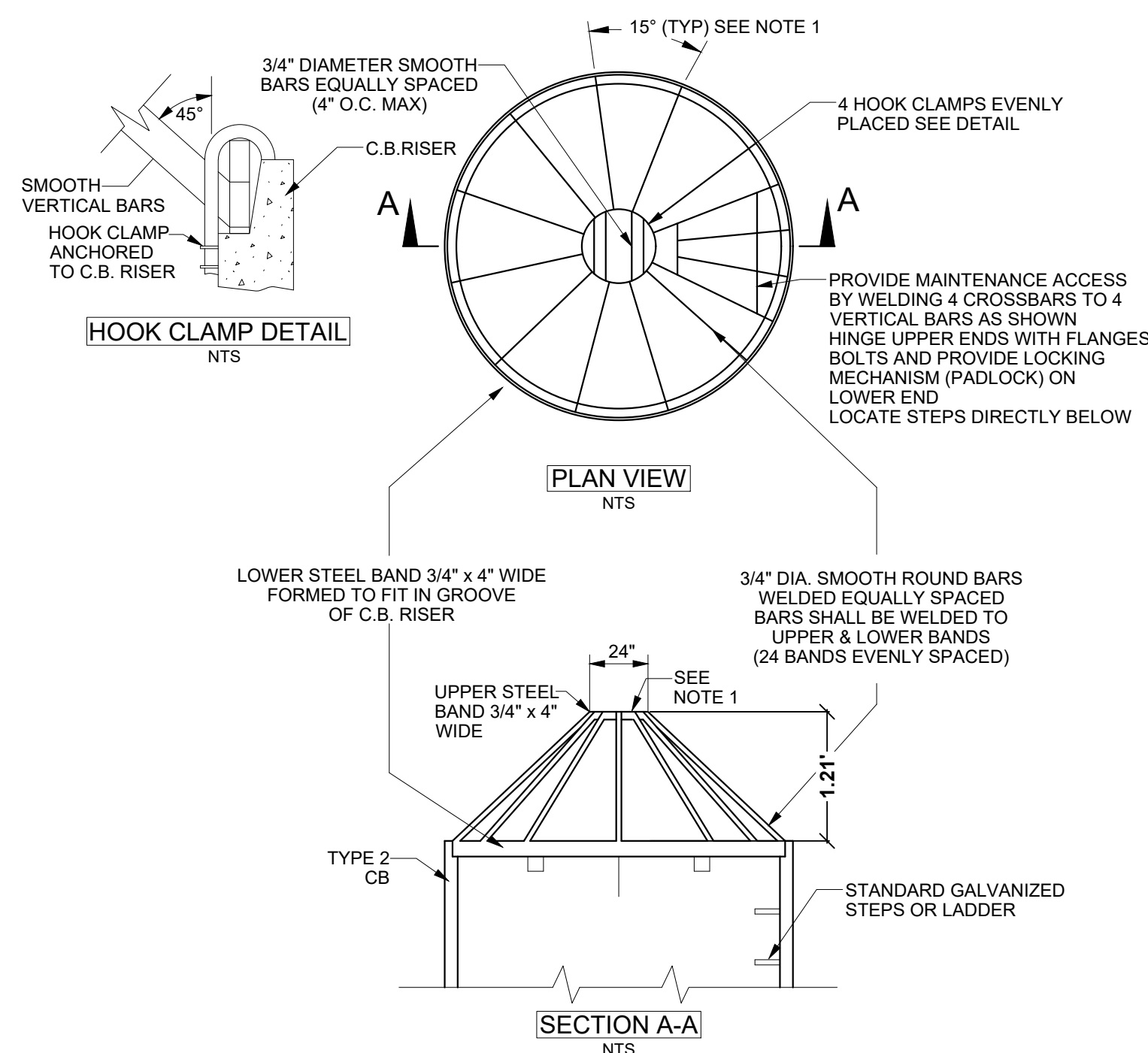
- COMPOST TO AGGREGATE RATIO: 60 TO 65 PERCENT MINERAL AGGREGATE, 35 TO 40 PERCENT COMPOST.
- ORGANIC MATTER CONTENT: 5 TO 8 PERCENT BY WEIGHT.
- CATION EXCHANGE CAPACITY (CEC) MUST BE GREATER THAN 5 MILLIEQUIVALENTS (meq) PER 100 GRAMS OF DRY SOIL. NOTE: SOIL MIXES MEETING THE ABOVE SPECIFICATIONS DO NOT HAVE TO BE TESTED FOR CEC. THEY WILL READILY MEET THE MINIMUM CEC.

GRASS NOTE:

THE TREATMENT INFILTRATION BASIN SHALL BE SEED OR SODDED WITH A SEED MIXTURE SUITABLE FOR WET CONDITIONS. THE FOLLOWING OR EQUIVALENT MIXTURE MAY BE USED:

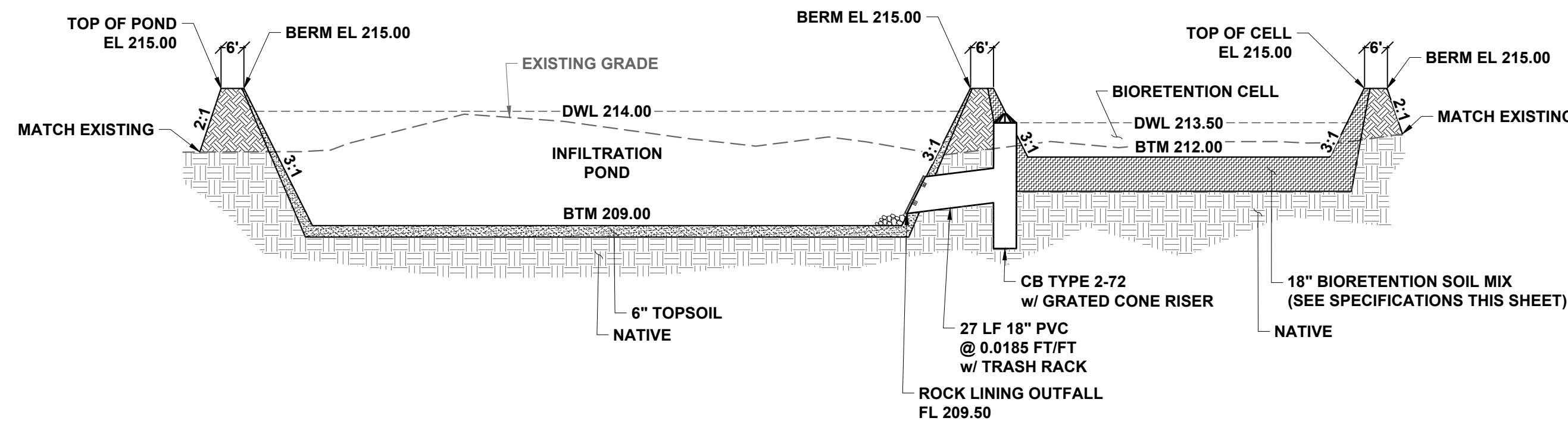
| | |
|--------------------|-----|
| TALL FESCUE | 40% |
| KENTUCKY BLUEGRASS | 15% |
| PERENNIAL RYE | 30% |
| CHEWINGS FESCUE | 15% |

APPLICATION SHALL BE 120 lbs/ACRE. IN ADDITION, 500 lbs/ACRE OF 10-20-20 FERTILIZER, 200 lbs/ACRE MULCH, AND 40 lbs/ACRE SOIL STABILIZER SHALL BE APPLIED WITH THE SEED MIXTURE.

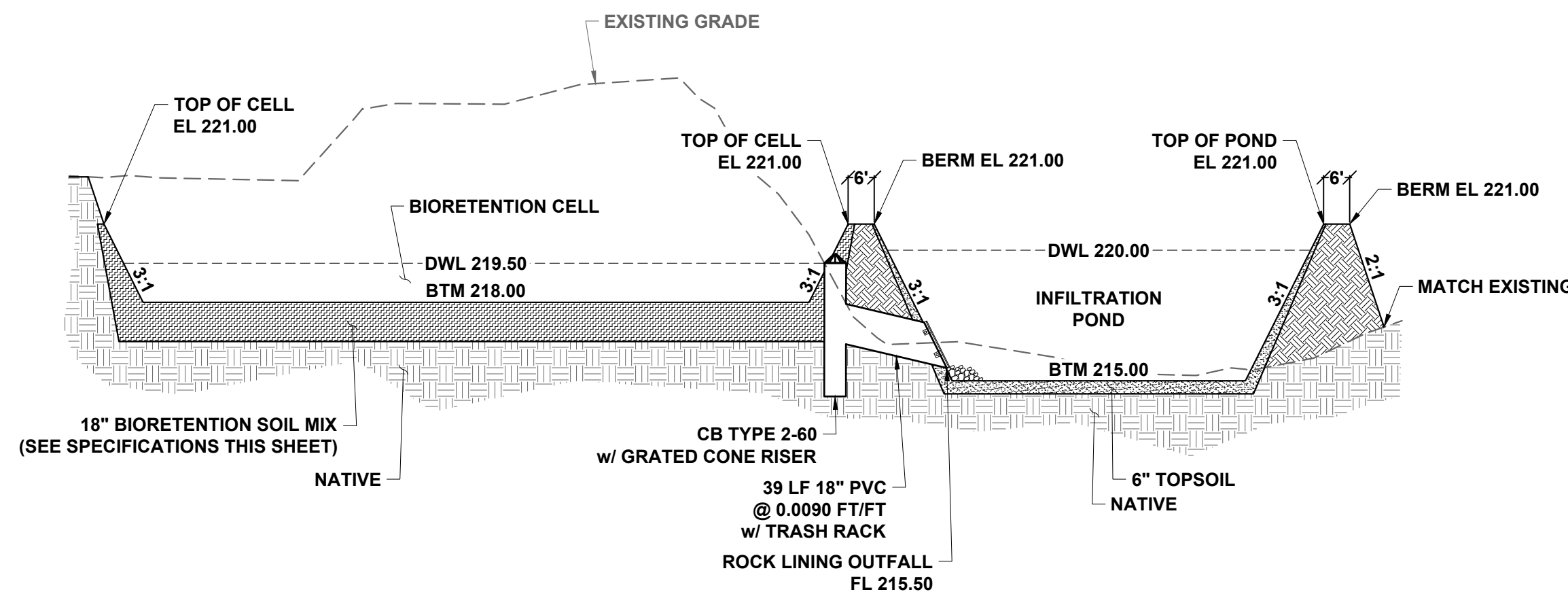


- NOTES:**
1. METAL PARTS MUST BE CORROSION RESISTANT; STEEL BARS MUST BE GALVANIZED.
 2. THIS DEBRIS BARRIER IS ALSO RECOMMENDED FOR USE ON THE INLET TO ROADWAY CROSS-CULVERTS WITH HIGH POTENTIAL FOR DEBRIS COLLECTION (EXCEPT ON TYPE 2 STREAMS)

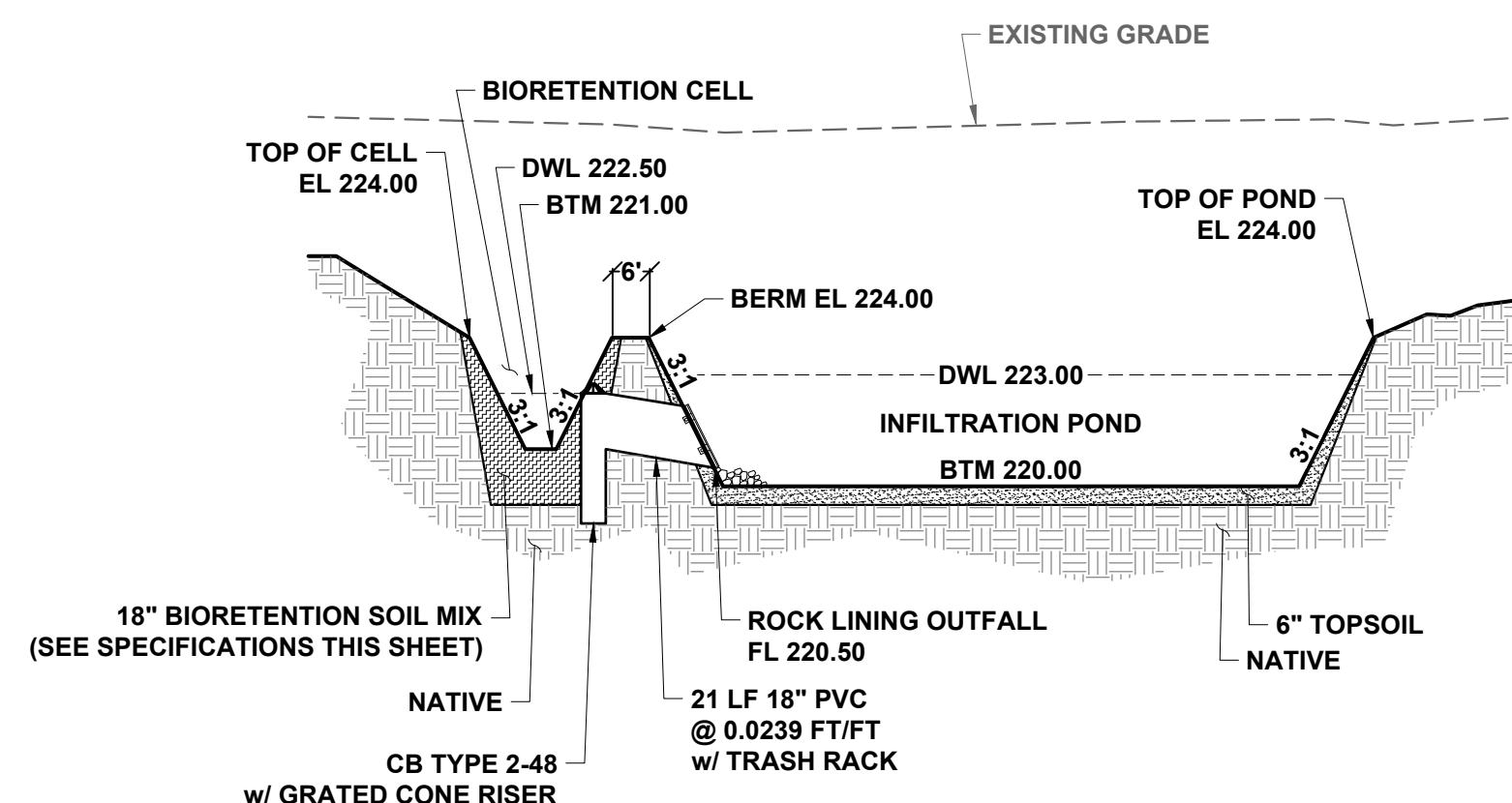
GRATED CONE RISER DETAIL
N.T.S.



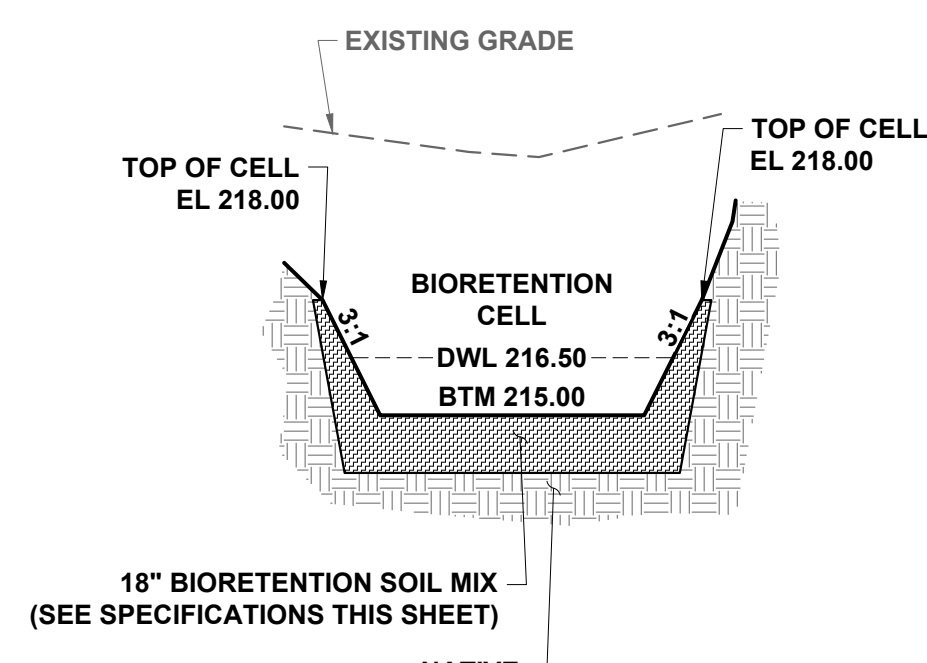
NORTHWEST POND SECTION A-5
N.T.S.



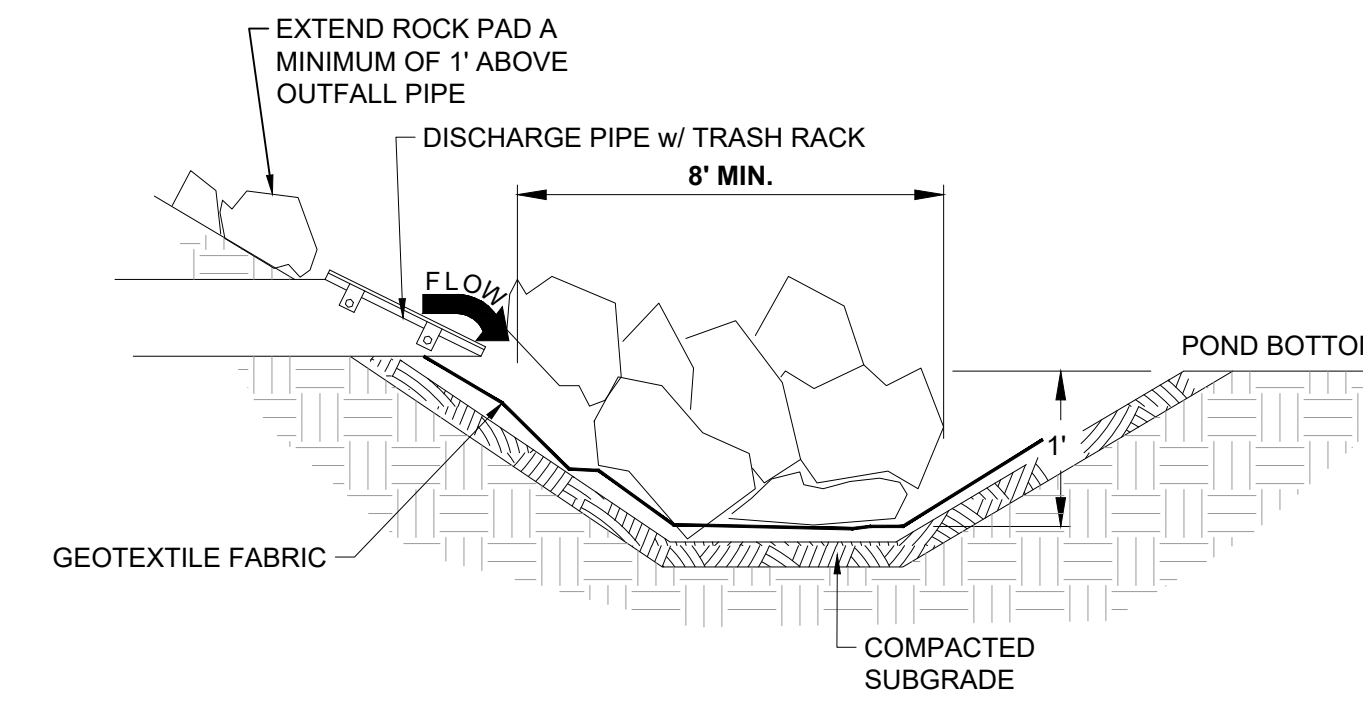
NORTHEAST POND SECTION B-5
N.T.S.



SOUTHWEST POND SECTION A-5
N.T.S.



SOUTHEAST BIORETENTION CELL SECTION D-5
N.T.S.



ROCK LINING OUTFALL DETAIL
N.T.S.

ROCK LINING NOTE:

ROCK LINING SHALL CONFORM WITH TABLE 111-3.8 OF THE 2022 DRAINAGE DESIGN AND EROSION CONTROL MANUAL

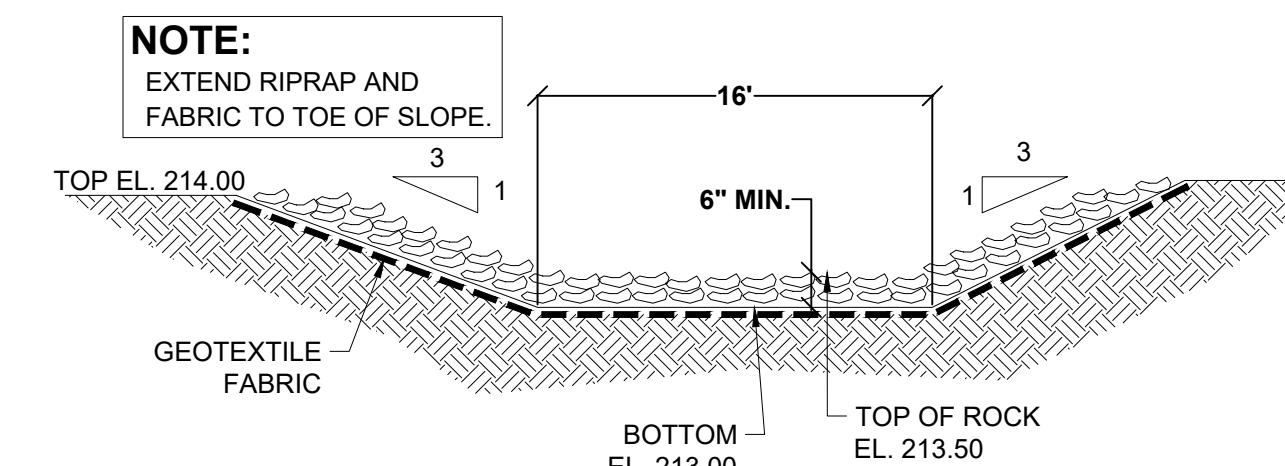
ROCK PROTECTION SHALL BE REASONABLY QUARRY SPALLS WITH THE FOLLOWING GRADATION:

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

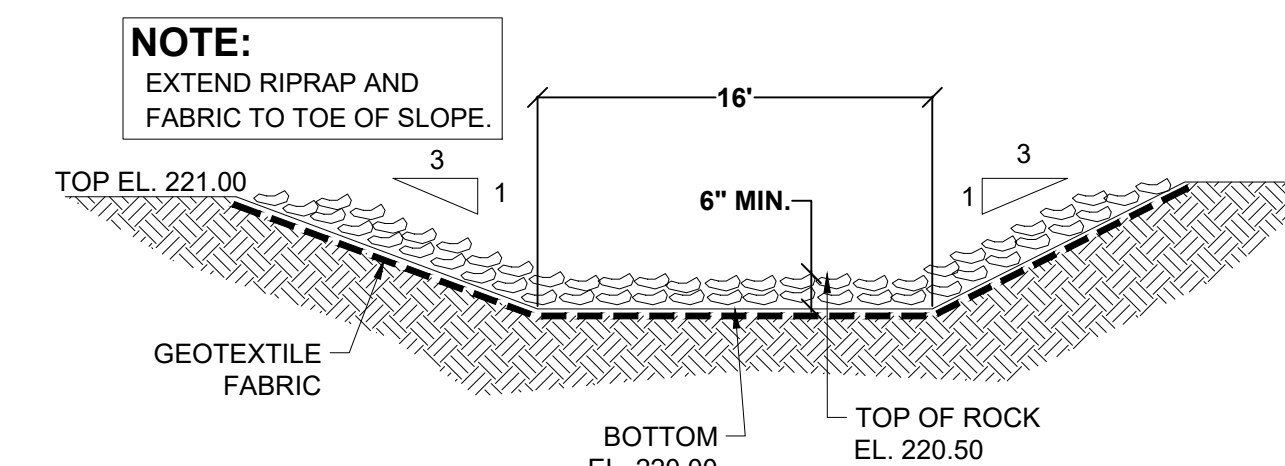
ARMOR POND A MINIMUM OF 3' IN EACH SIDE OF OUTFALL

GEOTEXTILE FABRIC NOTE:

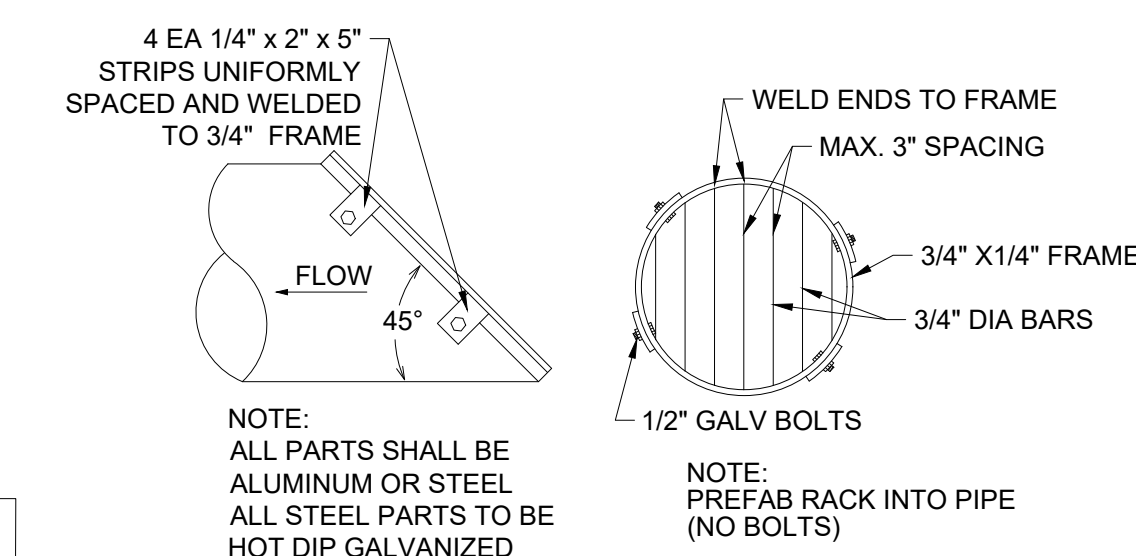
GEOTEXTILE FABRIC USED UNDER ROCK PROTECTION OF OUTFALLS AND OVERFLOW SPILLWAYS SHOWN IN THESE PLANS SHALL BE US FABRICS US160NW OR APPROVED EQUIVALENT.



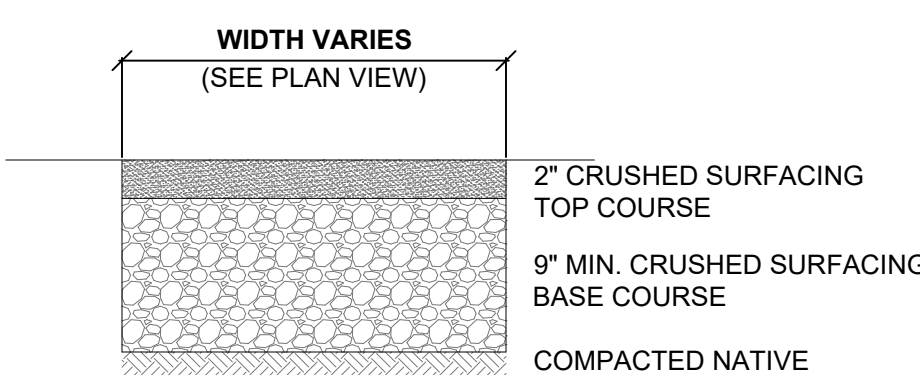
NORTHWEST POND OVERFLOW SPILLWAY
N.T.S.



NORTHEAST POND OVERFLOW SPILLWAY
N.T.S.



TRASH RACK DETAIL
N.T.S.



GRAVEL POND ROADWAY SECTION
N.T.S.

POND BOTTOM COMPACTION NOTE:

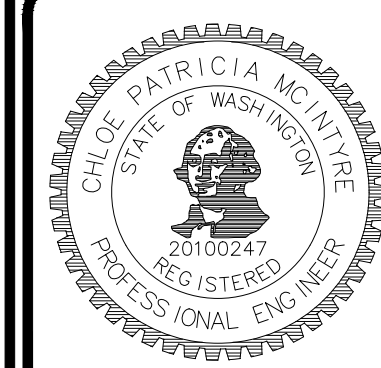
COMPACTION OF SOILS IN INFILTRATION PONDS CAN SIGNIFICANTLY REDUCE THE DESIGN INFILTRATION RATE OF THE SOILS. PREVENT COMPACTION OF SOILS IN THE BIORETENTION CELLS AND INFILTRATION BASINS SHOWN IN THESE PLANS BY USING ONLY LOW GROUND PRESSURE VEHICLES IN BASINS DURING AND AFTER CONSTRUCTION.

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.

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DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: V

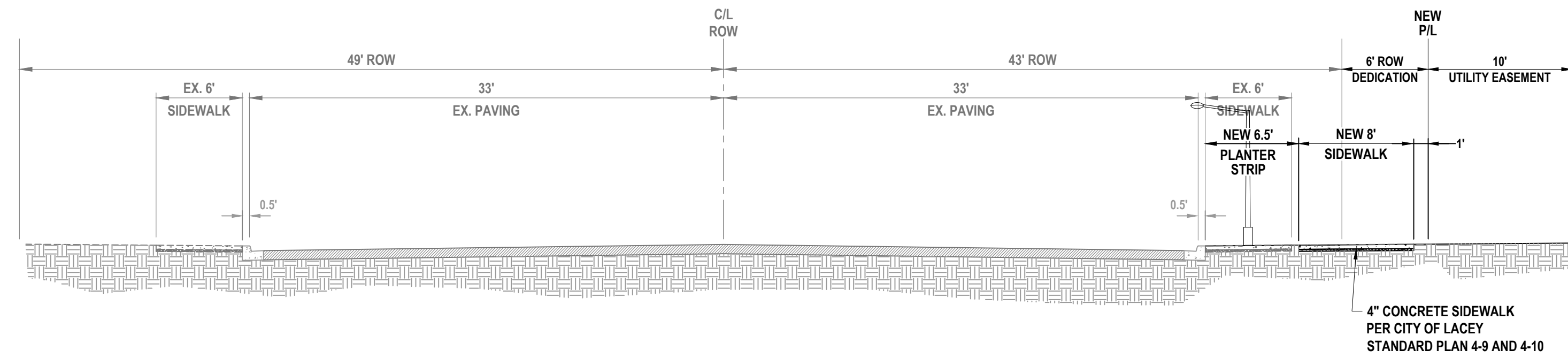


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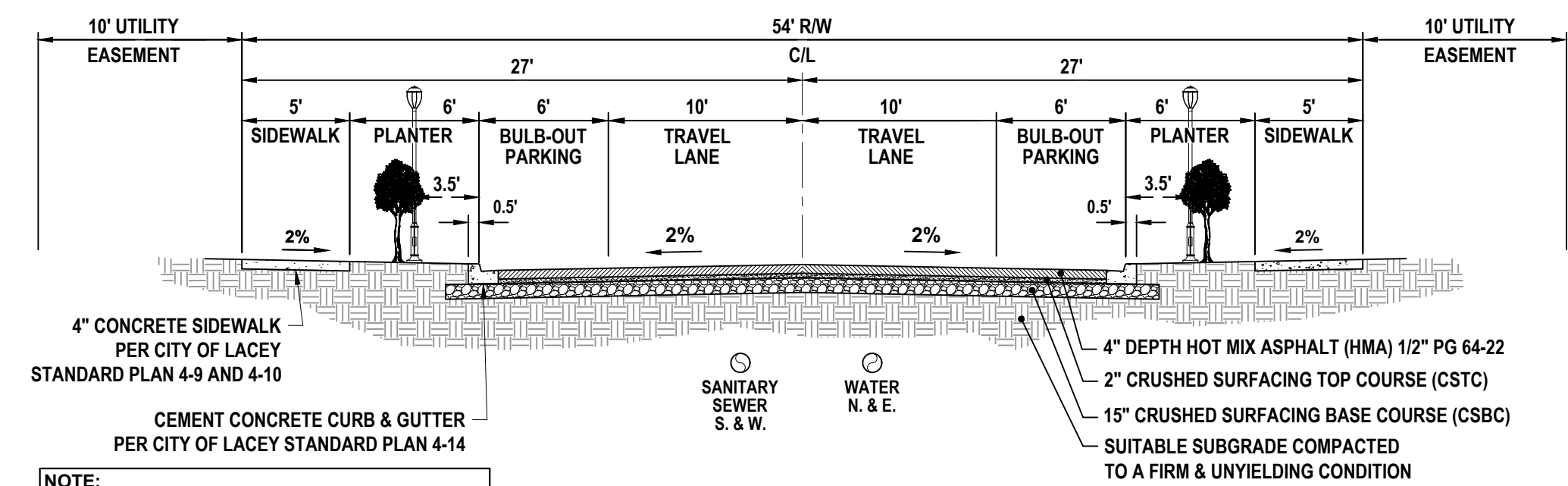
DATE: _____
REVISIONS: _____

8322 STEILACOOM RD SE, LACEY, WA 98513
PRELIMINARY POND DETAILS
A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 18 NORTH RANGE 1 WEST, W.M.

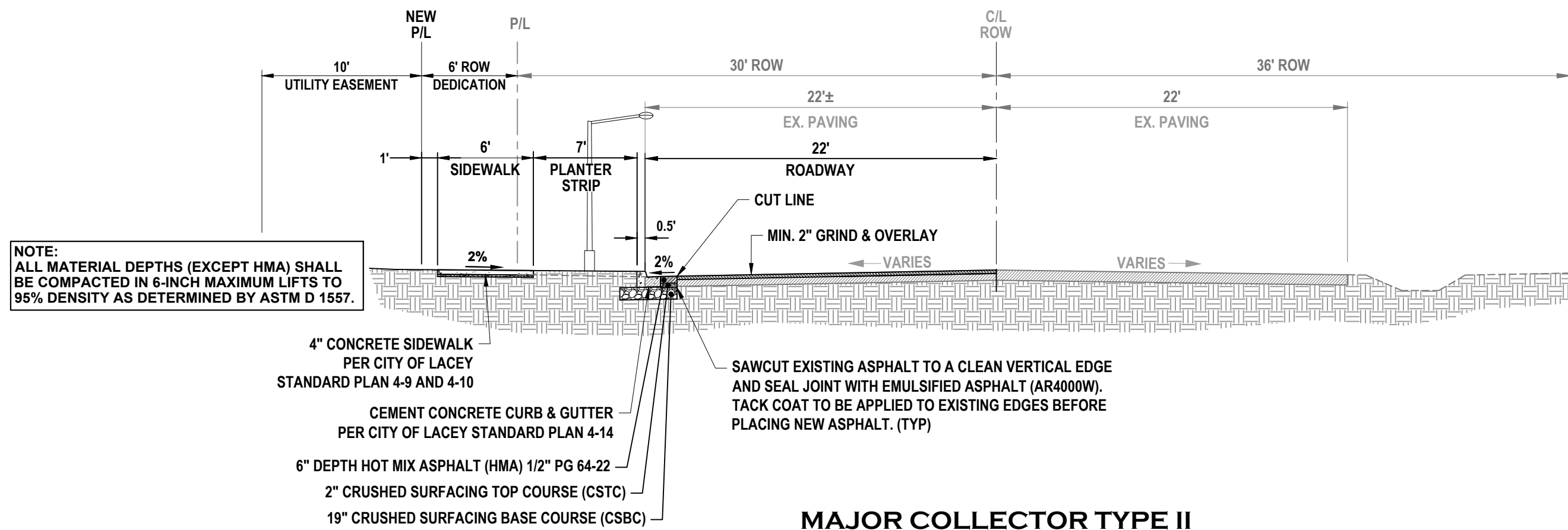
AGENCY NO. HTE-22-0135
SHEET: 5 OF 12
H:\DSN\21-000\21-100\PRELIMINARY
INDEX: 21-100 pre-grd&dm
JOB: 21-100



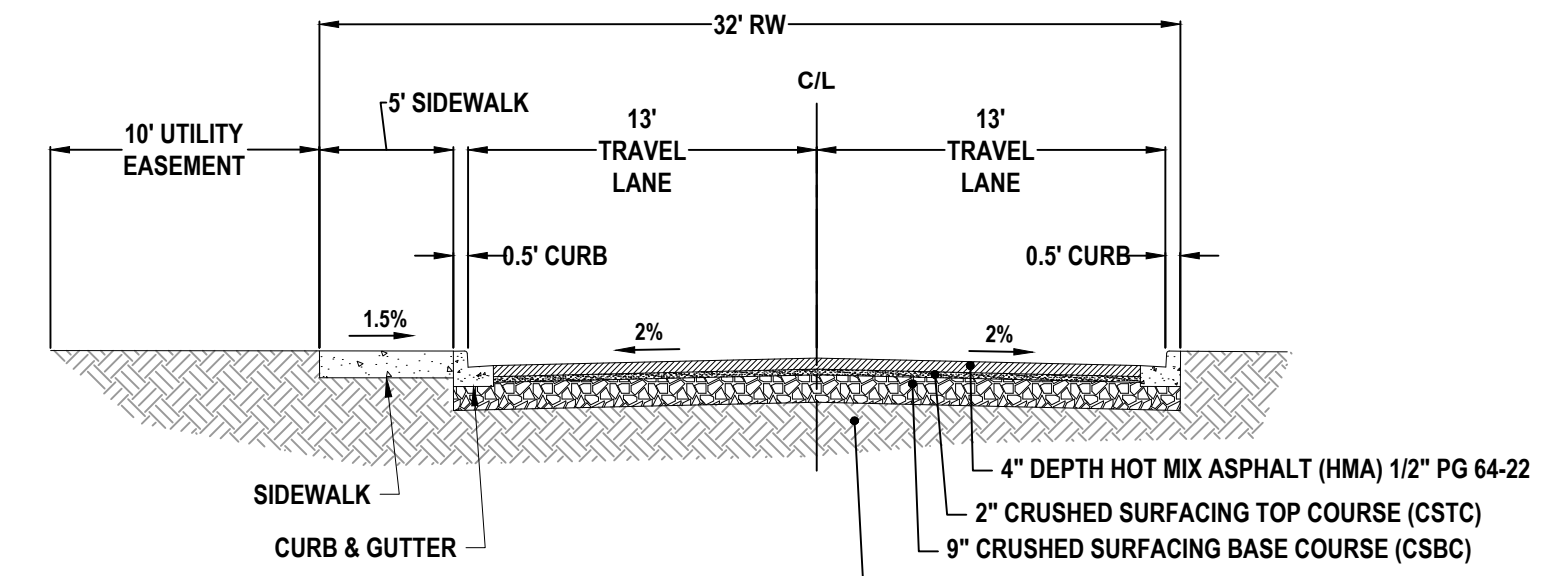
STREET DESIGN ARTERIAL
MARVIN ROAD SE FRONTAGE IMPROVEMENTS
N.T.S.



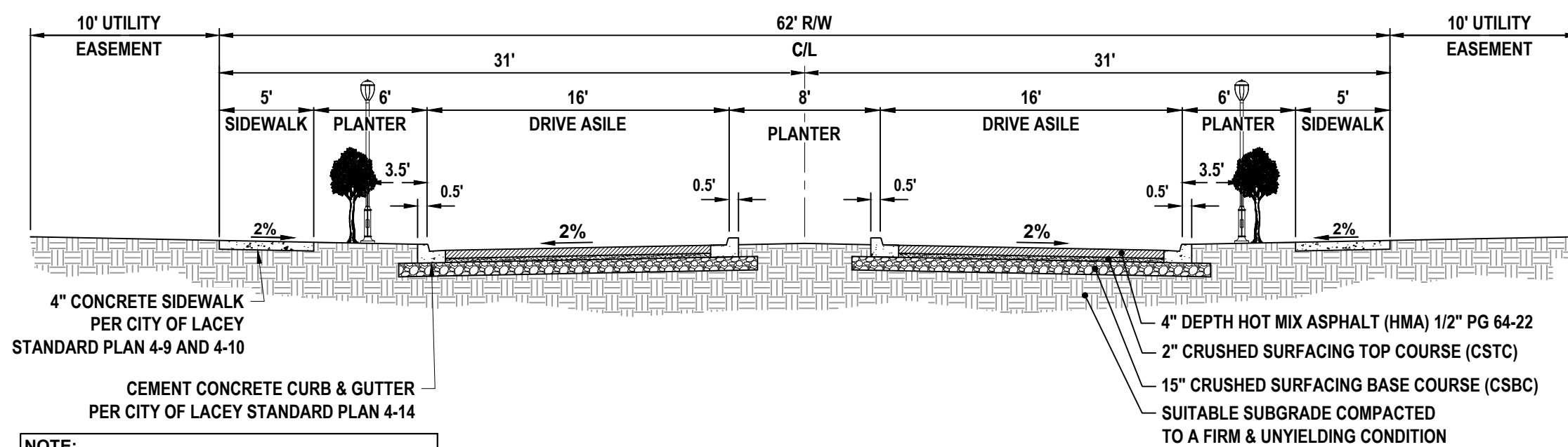
MAJOR LOCAL RESIDENTIAL
'A' ROAD, 'B' ROAD, 'C' ROAD, 'D' ROAD, 'E' ROAD, 'F' ROAD & 'G' ROAD
N.T.S.



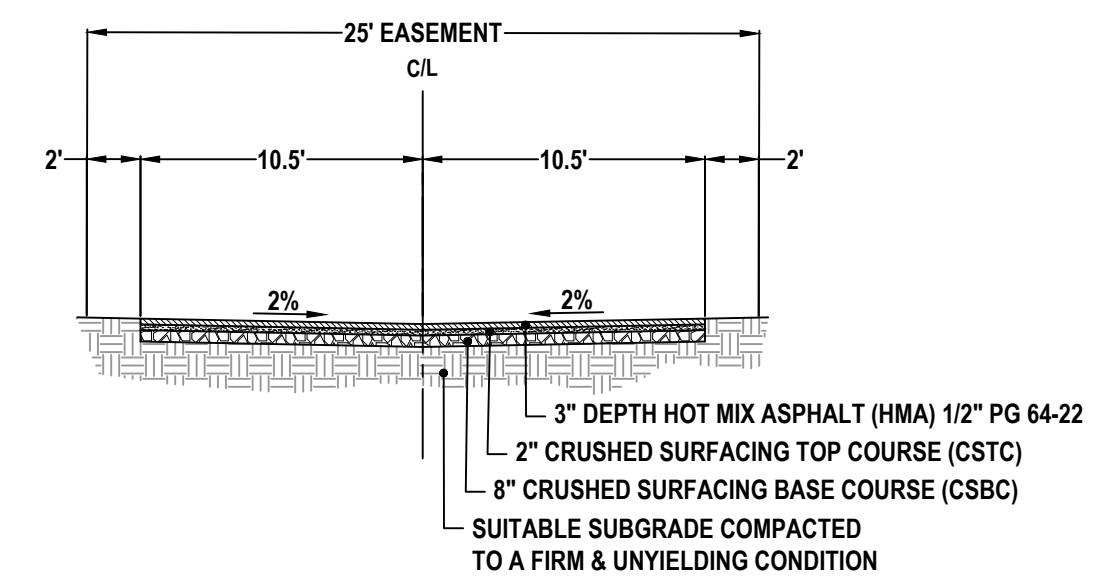
MAJOR COLLECTOR TYPE II
STEILACOOM ROAD SE FRONTAGE IMPROVEMENTS
N.T.S.



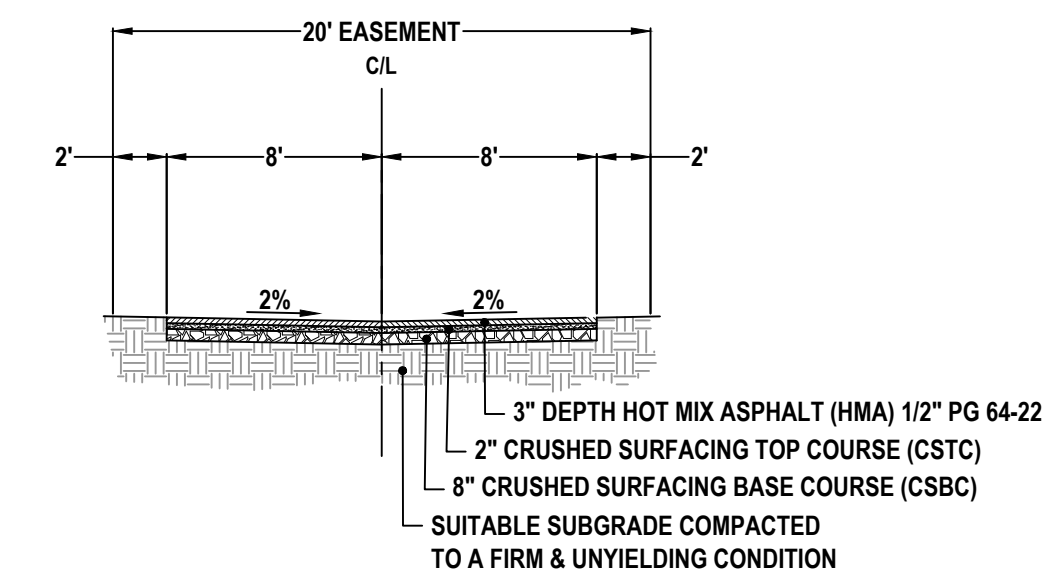
32' PRIVATE ROADWAY SECTION
TRACT H
N.T.S.



MAJOR COLLECTOR TYPE II - MODIFIED
PLAT ENTRIES
N.T.S.



25' ALLEY SECTION
TRACT I
N.T.S.



20' ALLEY SECTION
TRACT E & TRACT J
N.T.S.

NOTE: ALL MATERIAL DEPTHS (EXCEPT HMA) SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY AS DETERMINED BY ASTM D 1557.

NOTE: ALL MATERIAL DEPTHS (EXCEPT HMA) SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY AS DETERMINED BY ASTM D 1557.

NOTE: ALL MATERIAL DEPTHS (EXCEPT HMA) SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY AS DETERMINED BY ASTM D 1557.

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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: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: N/A



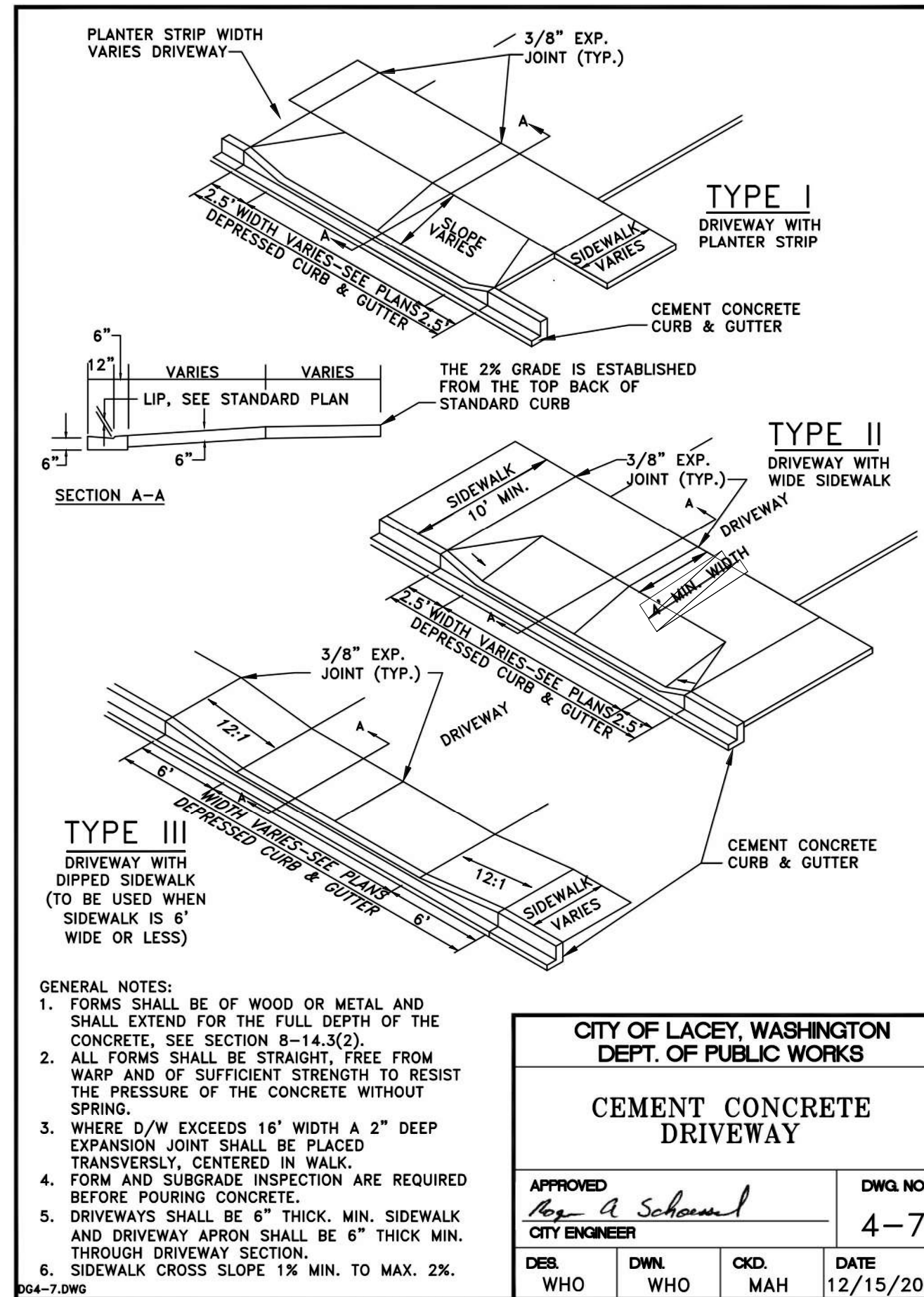
HATTON GODAT PANTIER
ENGINEERS AND SURVEYORS
3910 MARTIN WAY E SUITE B
CLYMPIA, WA 98506
TEL: 360.943.1599 FAX: 360.357.6299
hattonpantier.com

REVISIONS:
DATE:

8322 STEILACOOM RD SE, LACEY, WA 98513
PRELIMINARY STREET SECTIONS
A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 18 NORTH RANGE 1 WEST, W.M.

AGENCY NO. HTE-22-0135
SHEET: 6 OF 12
H:\DGN\21-000\21-100\PRELIMINARY
INDEX: 21-100 pre-det
JOB: 21-100

TP# 11814140500, 11813220300



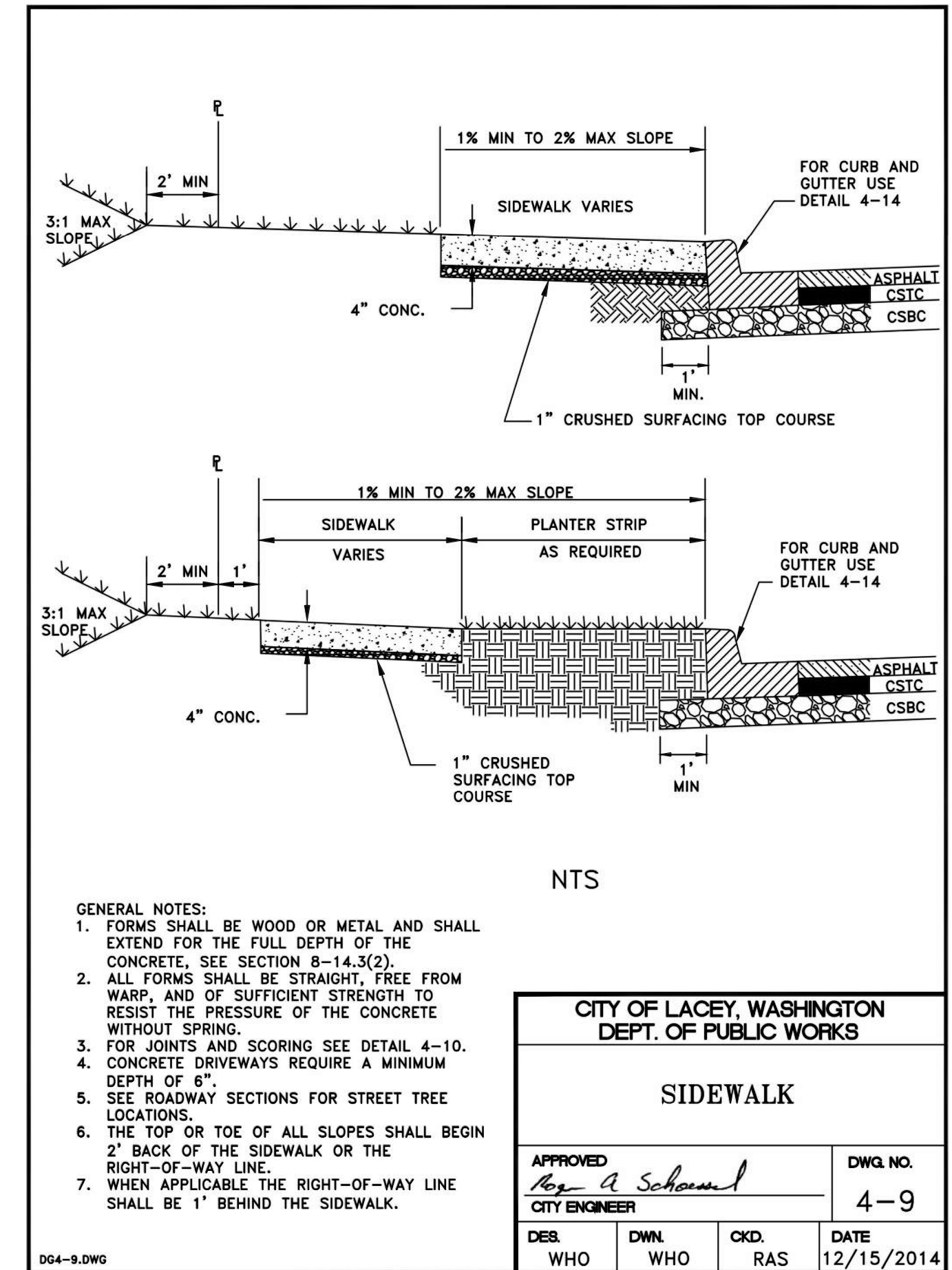
CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

CEMENT CONCRETE DRIVEWAY

APPROVED: *Rog A Schawal*
CITY ENGINEER

DWG. NO. 4-7

DESIGNED BY: EP DWN: WHO CKD: MAH DATE: 12/15/2014



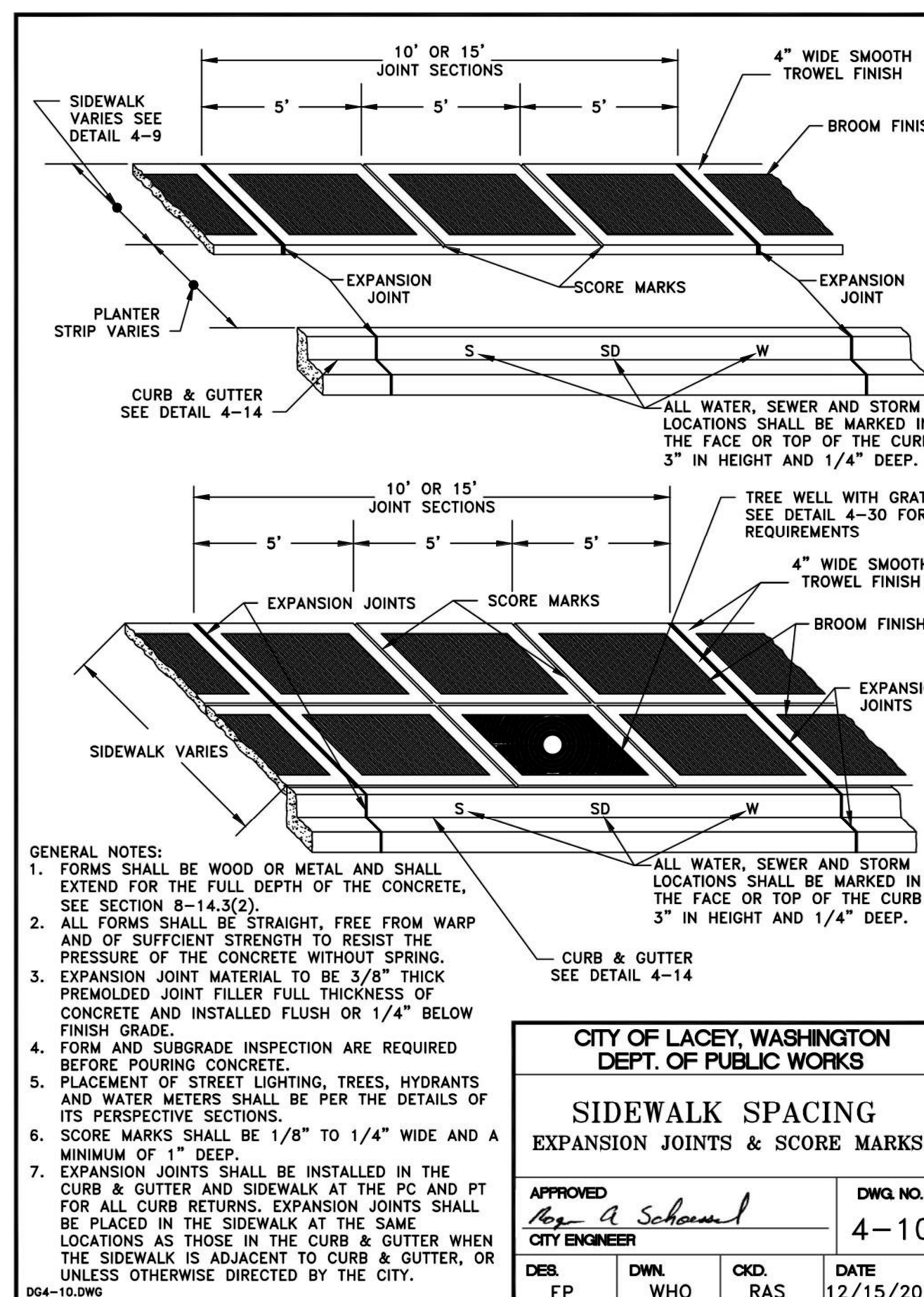
CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

SIDEWALK

APPROVED: *Rog A Schawal*
CITY ENGINEER

DWG. NO. 4-9

DESIGNED BY: EP DWN: WHO CKD: RAS DATE: 12/15/2014



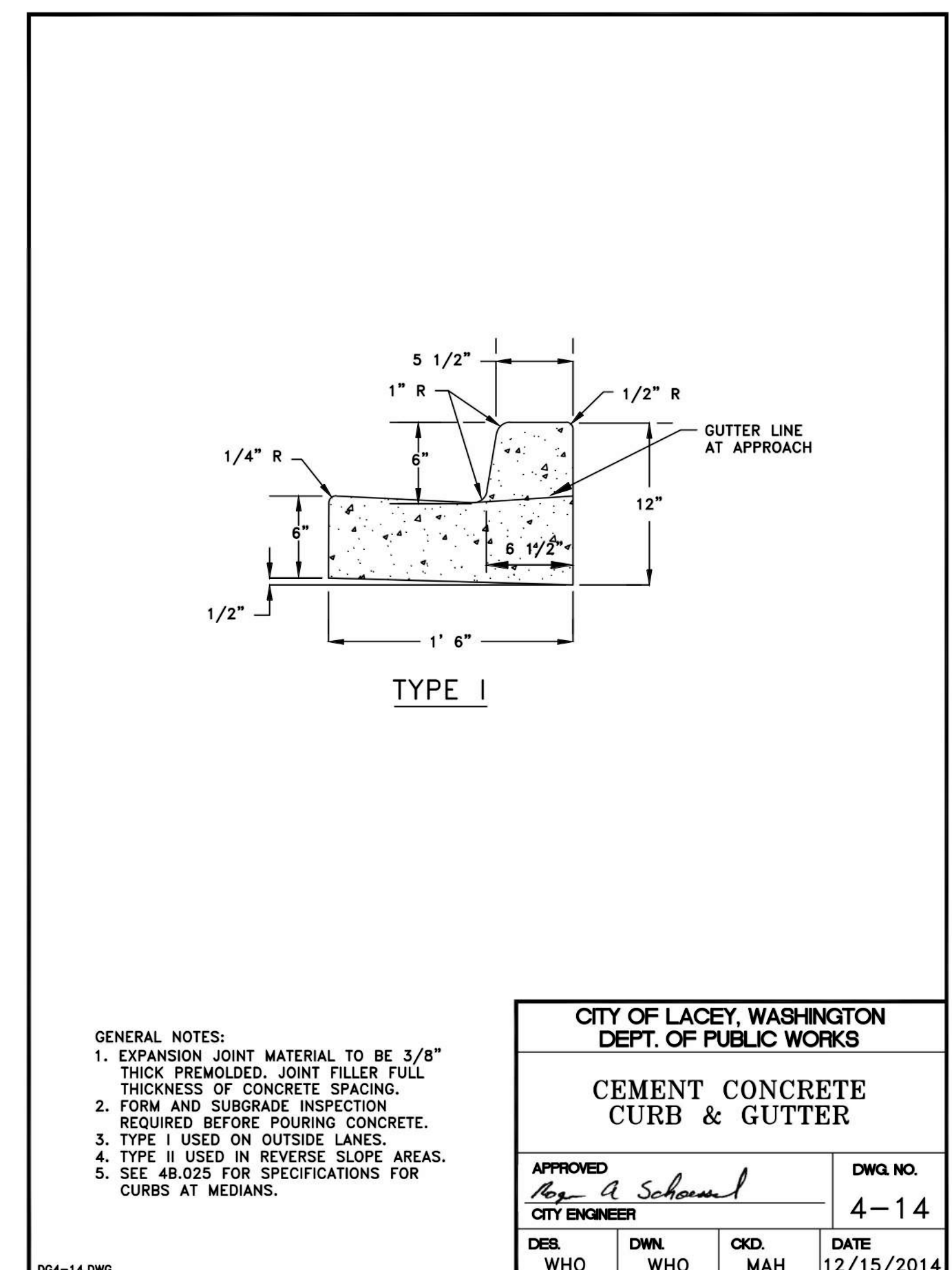
CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

**SIDEWALK SPACING
EXPANSION JOINTS & SCORE MARKS**

APPROVED: *Rog A Schawal*
CITY ENGINEER

DWG. NO. 4-10

DESIGNED BY: EP DWN: WHO CKD: RAS DATE: 12/15/2014



CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

CEMENT CONCRETE CURB & GUTTER

APPROVED: *Rog A Schawal*
CITY ENGINEER

DWG. NO. 4-14

DESIGNED BY: EP DWN: WHO CKD: MAH DATE: 12/15/2014

DESIGNED BY: JG
 DRAWN BY: BSN
 CHECKED BY: CPM
 DATE: JUNE 2023
 SCALE: N/A



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

DATE: _____
 REVISIONS: _____

8322 STEILACOOM RD SE, LACEY, WA 98513
PRELIMINARY GRADING DETAILS
 A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 16 NORTH RANGE 1 WEST, W.M.

AGENCY NO. HTE-22-0135
 SHEET: 7 OF 12
 H:\DGN\21-000\21-100\PRELIMINARY
 INDEX: 21-100 pre-det
 JOB: 21-100

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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.

GENERAL NOTES (STORM DRAIN CONSTRUCTION)

- ALL APPROVALS AND PERMITS REQUIRED BY THE CITY OF LACEY SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. A GRADING PERMIT FOR STORM DRAIN CONSTRUCTION MAY BE REQUIRED.
- STORM DRAIN PIPE MATERIAL SHALL BE ON THE WSDOT QUALIFIED PRODUCTS LIST FOR THE SPECIFICATION LISTED BELOW AND APPROVED BY THE CITY PRIOR TO INSTALLATION.
 - PLAIN CONCRETE STORM SEWER PIPE OR REINFORCED CONCRETE STORM SEWER PIPE PER WSDOT STANDARD SPECIFICATION 9-05.7.
 - SOLID WALL PVC STORM SEWER PIPE PER WSDOT STANDARD SPECIFICATION 9-05.12(1).
 - DUCTILE IRON SEWER PIPE PER WSDOT STANDARD SPECIFICATION 9-05.13.
 - HANCOR BLUE SEAL™ AND ADVANCED DRAINAGE SYSTEMS (ADS/HANCOR) N-12 HDPE AND (ADS/HANCOR) SANITITE UP TO 36" IN DIAMETER PER WSDOT STANDARD SPECIFICATIONS 9-05.20 AND 9-05.24.
 - ADVANCE DRAINAGE SYSTEMS (ADS) CORRUGATED POLYPROPYLENE PIPE (CPEP) FROM 42" TO 60" IN DIAMETER PER WSDOT 9-05.24 (1) FOR USE NOT IN RIGHT OF WAY.
 - CONTECH DUROMAXX STEEL RIB REINFORCED POLYETHYLENE PIPE, IN DIAMETERS FROM 24 INCH TO 60 INCH PER WSDOT STANDARD SPECIFICATION 9-05.22.
- ALL STORM DRAINAGE SYSTEMS SHALL BE TESTED PER WSDOT STANDARD SPECIFICATION SECTION 7-04.3. TESTING SHALL BE DONE BY THE CONTRACTOR.
- TESTING OF THE STORM SEWER SHALL INCLUDE VIDEO RECORDING OF THE MAIN BY THE CONTRACTOR IMMEDIATELY PRIOR TO VIDEO RECORDING. ENOUGH WATER SHALL BE RUN DOWN THE LINE SO IT COMES OUT THE LOWER CATCH BASIN. A COPY OF THE VIDEO RECORDING SHALL BE SUBMITTED TO THE CITY OF LACEY. ACCEPTANCE OF THE LINE WILL NOT BE MADE UNTIL AFTER THE RECORDING HAS BEEN REVIEWED AND APPROVED BY THE CITY. TESTING SHALL TAKE PLACE AFTER ALL UNDERGROUND UTILITIES ARE INSTALLED AND COMPACTION OF THE ROADWAY SUBGRADE IS COMPLETE.
- SPECIAL STRUCTURES, OIL/WATER SEPARATORS AND OUTLET CONTROLS SHALL BE INSTALLED PER PLANS AND MANUFACTURERS' RECOMMENDATIONS. WHERE OIL/WATER SEPARATORS ARE CONNECTED TO A SEWER SYSTEM, THEY SHALL BE INSTALLED WITH A P-TRAP OR CHECK VALVE TO PREVENT ODORS.
- ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH CORE REQUIREMENT 2 OF THE CURRENT CITY OF LACEY STORMWATER DESIGN MANUAL. FOR SITES WHERE VEGETATION HAS BEEN PLANTED THROUGH HYDROSEEDING, THE FINANCIAL GUARANTEE WILL NOT BE RELEASED UNTIL THE VEGETATION HAS BEEN THOROUGHLY ESTABLISHED.
- WHERE CONNECTIONS REQUIRE "FIELD VERIFICATIONS", CONNECTION POINTS WILL BE EXPOSED BY CONTRACTOR AND FITTINGS VERIFIED 48 HOURS PRIOR TO DISTRIBUTING SHUT-DOWN NOTICES.
- ALL CATCH BASINS/MANHOLES SHALL HAVE PADS PER LACEY STANDARD DETAIL.
- ANY CHANGES TO THE DESIGN SHALL FIRST BE REVIEWED AND APPROVED IN WRITING BY THE PROJECT ENGINEER AND THE CITY OF LACEY.
- ALL STORM PIPE SHALL BE A MINIMUM OF 12-INCH DIAMETER FOR MAINS AND 8-INCH DIAMETER FOR LATERALS CROSSINGS. WHEN PRIVATE STORMWATER (I.E. ROOF, LOT OR FOOTING DRAINS) CANNOT BE INFILTRATED ON INDIVIDUAL LOTS, THE MINIMUM STANDARD PIPING CONNECTION TO THE PUBLIC SYSTEM SHALL BE 8-INCH PVC. THE 8-INCH MAIN USED FOR CONNECTION SHALL BEGIN AT THE RIGHT-OF-WAY. THE CONNECTION TO THE CATCH BASIN OR MANHOLE SHALL BE CORED.
- ALL STORM MAINS AND STORMWATER TREATMENT AND/OR FLOW CONTROL BMP'S/FACILITIES AREAS SHALL BE STAKED FOR GRADE AND ALIGNMENT BY AN ENGINEERING OR SURVEY FIRM LICENSED TO PERFORM SUCH WORK.
- THE MINIMUM STAKING OF STORM SEWER SYSTEMS SHALL BE AS FOLLOWS:
 - STAKE LOCATION OF ALL CATCH BASINS, MANHOLES AND OTHER FIXTURES FOR GRADE AND ALIGNMENT.
 - STAKE LOCATION, SIZE, AND DEPTH OF STORMWATER TREATMENT AND/OR FLOW CONTROL BMP'S/FACILITIES.
 - 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.
- PIPE SIZE, SLOPE, COVER, ETC., SHALL BE AS SPECIFIED IN THE CITY OF LACEY DEVELOPMENT GUIDELINES AND PUBLIC WORKS STANDARDS.
- ALL DRIVEWAY CULVERTS SHALL BE OF SUFFICIENT LENGTH TO PROVIDE A MINIMUM 3:1 SLOPE FROM THE EDGE OF THE DRIVEWAY TO THE BOTTOM OF THE DITCH AT THE CULVERT END. CULVERTS SHALL HAVE BEVELED END SECTIONS TO MATCH THE SIDE SLOPE.
- IF DRAINAGE OUTLETS (STUB-OUTS) ARE TO BE PROVIDED FOR EACH INDIVIDUAL LOT, THE STUB-OUTS SHALL CONFORM TO THE FOLLOWING:
 - EACH OUTLET SHALL BE SUITABLY LOCATED AT THE LOWEST ELEVATION ON THE LOT, SO AS TO SERVICE ALL FUTURE ROOF DOWNSPOUTS AND FOOTING DRAINS, DRIVEWAYS, YARD DRAINS, AND ANY OTHER SURFACE OR SUBSURFACE DRAINS NECESSARY TO RENDER THE LOTS SUITABLE FOR THEIR INTENDED USE. EACH OUTLET SHALL HAVE FREE-FLOWING, POSITIVE DRAINAGE TO AN APPROVED STORM WATER CONVEYANCE SYSTEM OR TO AN APPROVED OUTFALL LOCATION.
 - OUTLETS ON EACH LOT SHALL BE LOCATED WITH A FIVE-FOOT-HIGH, 2-INCH BY 4-INCH STAKE MARKED "STORM" OR "DRAIN." THE STUB-OUT SHALL VISIBLY EXTEND ABOVE SURFACE LEVEL AND BE SECURED TO THE STAKE.
 - DRAINAGE EASEMENTS ARE REQUIRED FOR DRAINAGE SYSTEMS DESIGNED TO CONVEY FLOWS THROUGH INDIVIDUAL LOTS.
 - THE DEVELOPER AND/OR CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL STUB-OUT CONVEYANCE LINES WITH RESPECT TO THE UTILITIES (E.G., POWER, GAS, TELEPHONE, TELEVISION).
 - ALL INDIVIDUAL STUB-OUTS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE LOT HOME OWNER.
- THE STORM DRAINAGE SYSTEM SHALL BE CONSTRUCTED ACCORDING TO APPROVED PLANS ON FILE WITH THE CITY. ANY MATERIAL DEVIATION FROM THE APPROVED PLANS WILL REQUIRE WRITTEN APPROVAL FROM THE CITY AND SHALL BE CORRECTED IN THE AS-BUILT DRAWINGS.
- ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE, INCORPORATED INTO A DRAINAGE FACILITY, OR ENGINEERED AS STRUCTURAL FILL OR SLOPE SHALL BE AMENDED IN ACCORDANCE WITH THE CURRENT CITY OF LACEY STORMWATER DESIGN MANUAL AND THEN SEEDED, PLANTED, AND MULCHED OR SIMILARLY STABILIZED AFTER CONSTRUCTION TO THE SATISFACTION OF THE CITY. FOR SITES WHERE GRASS HAS BEEN PLANTED THROUGH HYDROSEEDING, THE PERFORMANCE BOND WILL NOT BE RELEASED UNTIL THE GRASS HAS BEEN THOROUGHLY ESTABLISHED, UNLESS OTHERWISE APPROVED BY THE CITY.
- ALL EROSION CONTROL AND STORMWATER FACILITIES SHALL BE REGULARLY INSPECTED AND MAINTAINED BY THE CONTRACTOR DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT PROJECT.
- NO FINAL CUT OR FILL SLOPE SHALL EXCEED 2:1 WITHOUT STABILIZATION BY ROCKERY OR BY A STRUCTURAL RETAINING WALL.
- THE PROJECT ENGINEER SHALL VERIFY THE LOCATIONS, WIDTHS, THICKNESSES, AND ELEVATIONS OF ALL EXISTING PAVEMENTS AND STRUCTURES, INCLUDING UTILITIES AND OTHER FRONTAGE IMPROVEMENTS, WHICH ARE TO INTERFACE WITH NEW WORK. THE CONTRACTOR SHALL PROVIDE ALL TRIMMING, CUTTING, SAW CUTTING, GRADING, LEVELING, SLOPING, COATING, AND OTHER WORK, INCLUDING MATERIALS AS NECESSARY TO CAUSE THE INTERFACE WITH EXISTING WORKS TO BE PROPER, WITHOUT CONFLICT, ACCEPTABLE TO THE ENGINEER AND THE CITY, COMPLETE IN PLACE, AND READY TO USE.
- COMPACTION OF ALL FILL AREAS SHALL BE PER CURRENT APWA SPECIFICATIONS. FILL SHALL BE PROVIDED IN 6" MAXIMUM LIFTS AND SHALL BE COMPACTED TO 95 PERCENT OF ITS MAXIMUM RELATIVE DENSITY. DEVIATION FROM THIS STANDARD MAY BE APPROVED BY THE DIRECTOR, OR DESIGNEE, WHERE RECOMMENDED BY THE LICENSED PROFESSIONAL ENGINEER FOR PLANNED OR EXISTING INFILTRATION FACILITIES.

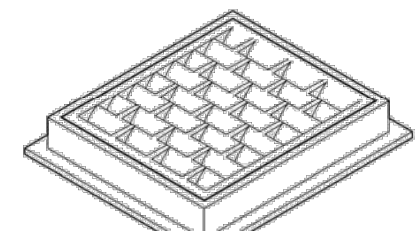
REVISED: 03/2017

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.

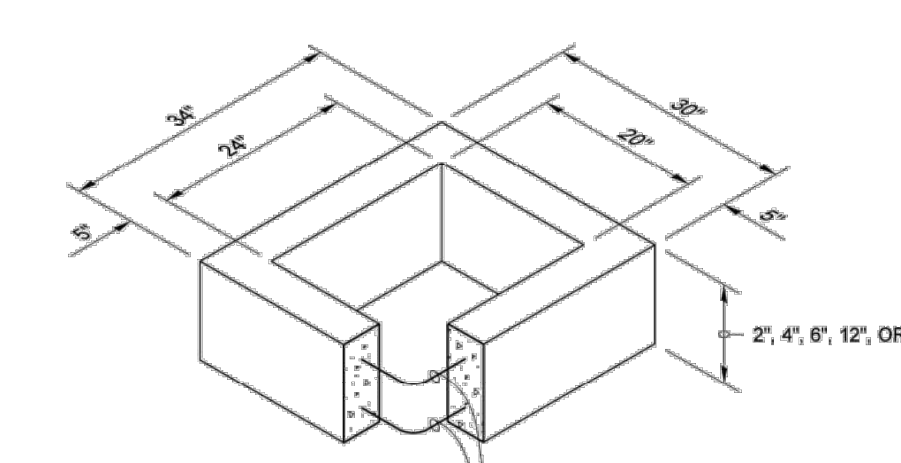
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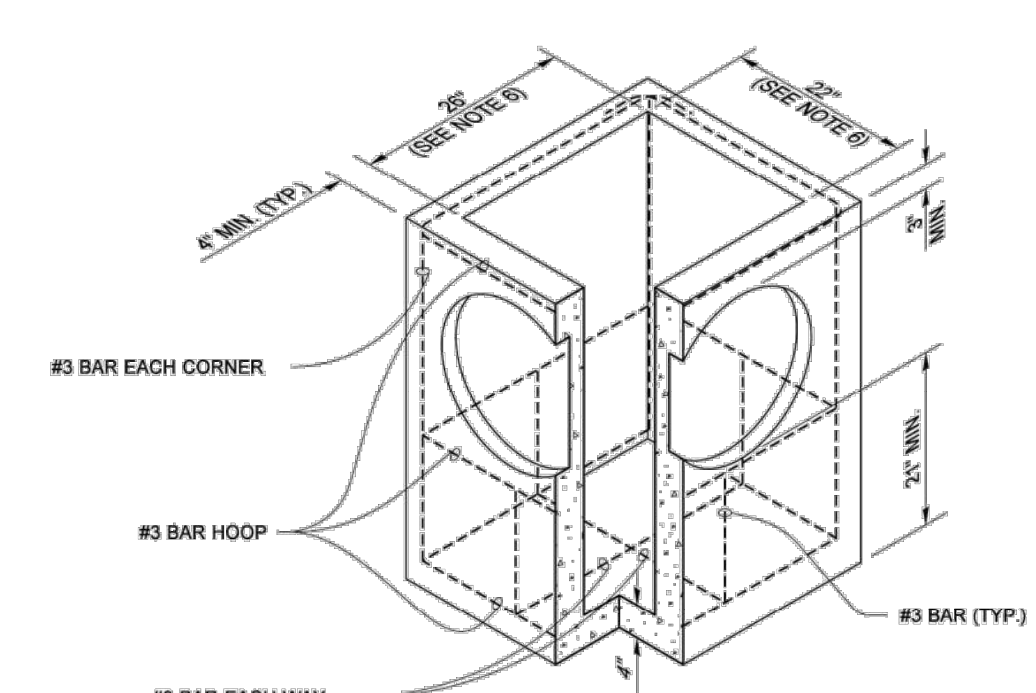
DRAWN BY: FERIN LIDDELL



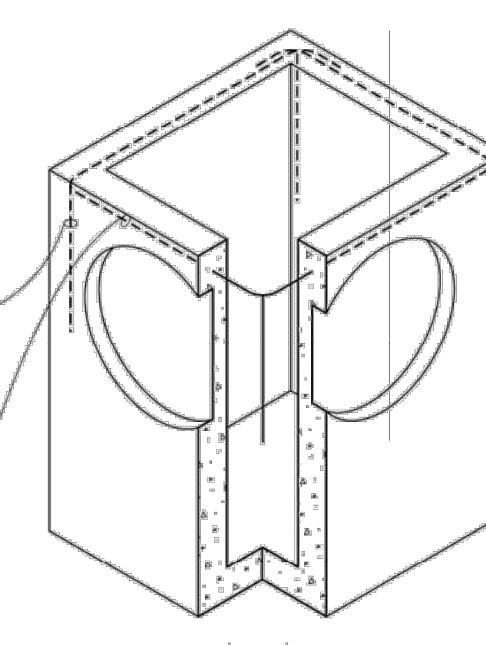
FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION

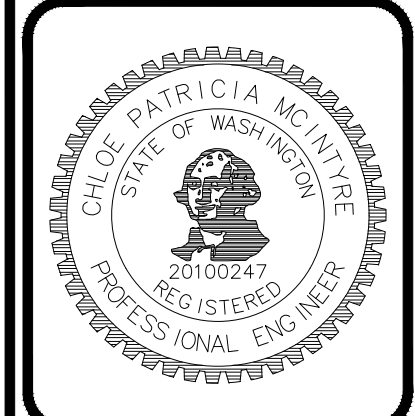


ALTERNATIVE PRECAST BASE SECTION

| PIPE ALLOWANCES | |
|--|----------------------------------|
| PIPE MATERIAL | MAXIMUM INSIDE DIAMETER (INCHES) |
| REINFORCED OR PLAIN CONCRETE | 12" |
| ALL METAL PIPE | 15" |
| CPSPSP # (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

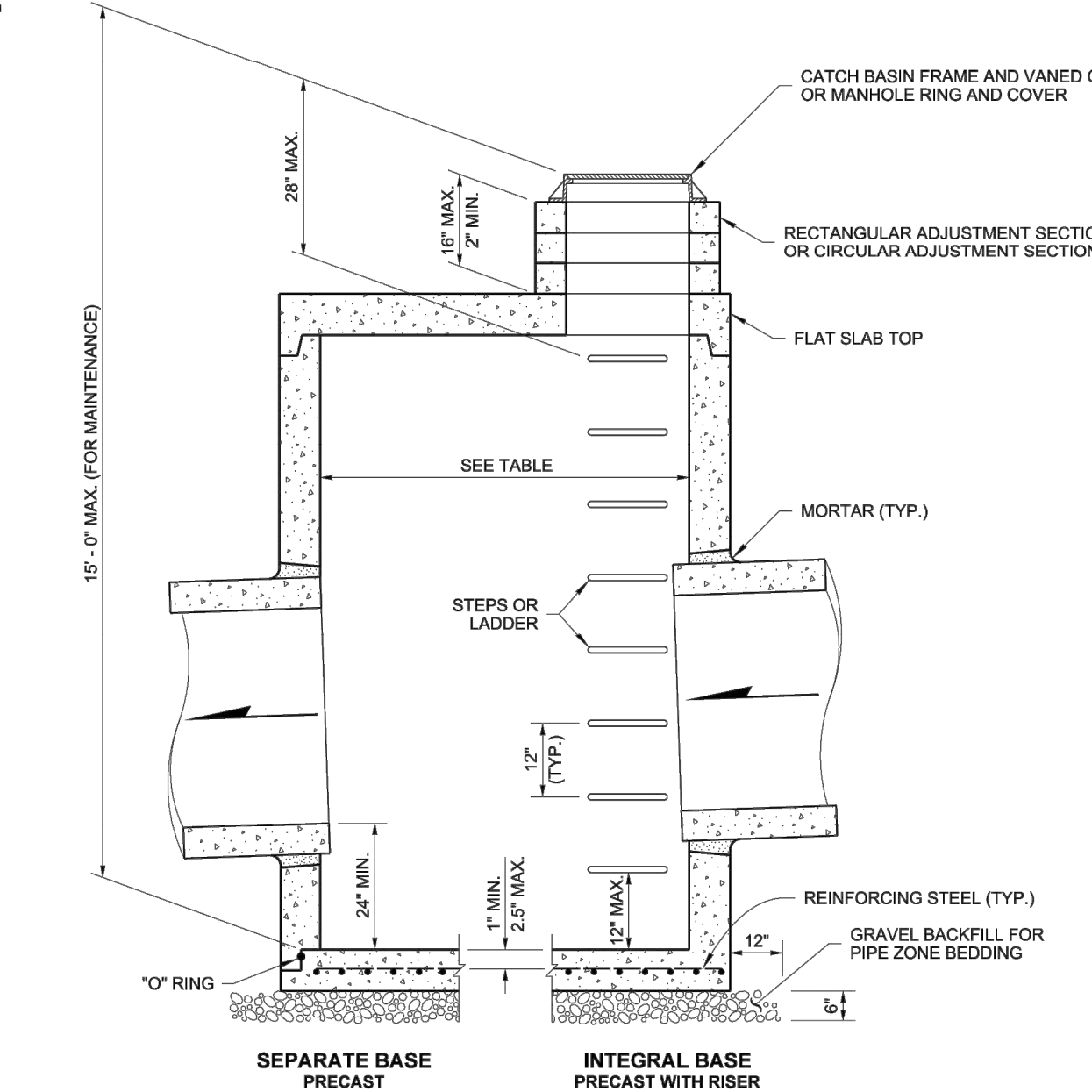
DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: N/A



CATCH BASIN TYPE 1
STANDARD PLAN B-5.20-03
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Digitally signed by Roark, Steve
Date: 2023.09.09 09:48:23 -0700
Roark, Steve
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: FERIN LIDDELL



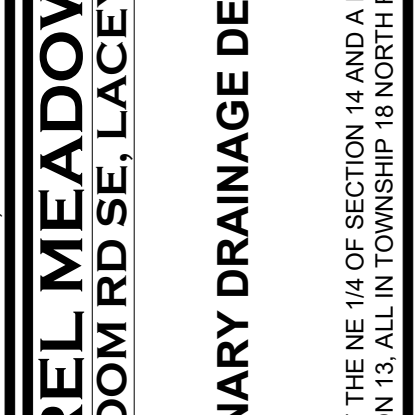
SEPARATE BASE PRECAST

INTEGRAL BASE PRECAST WITH RISER (48" (IN) - 72" (IN) ONLY)

| 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 | CPSPSP ① | SOLID WALL PVC ② | PROFILE WALL PVC ③ |
| 48" | 24" | 30" | 24" | 30" | 30" |
| 54" | 30" | 36" | 30" | 36" | 36" |
| 60" | 36" | 42" | 36" | 42" | 42" |
| 72" | 42" | 54" | 42" | 48" | 48" |
| 84" | 54" | 60" | 54" | 48" | 48" |
| 96" | 60" | 72" | 60" | 48" | 48" |
| 120" | 66" | 84" | 60" | 48" | 48" |
| 144" | 78" | 96" | 60" | 48" | 48" |

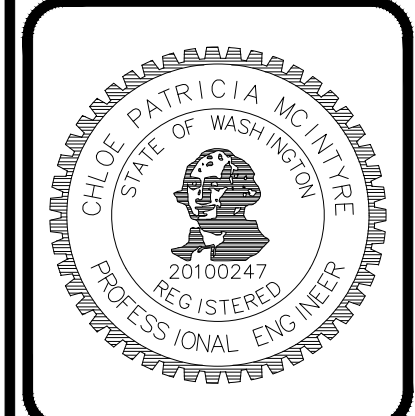
DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: N/A



CATCH BASIN TYPE 2
STANDARD PLAN B-10.20-02
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Digitally signed by Heilman, Julie
Date: 2023.09.09 12:49:49 PM -0700
Heilman, Julie
STATE DESIGN ENGINEER
Washington State Department of Transportation

DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: N/A



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

REVISIONS:
DATE:

8322 STEILACOOM RD SE, LACEY, WA 98513
MOREL MEADOWS
PRELIMINARY DRAINAGE DETAILS

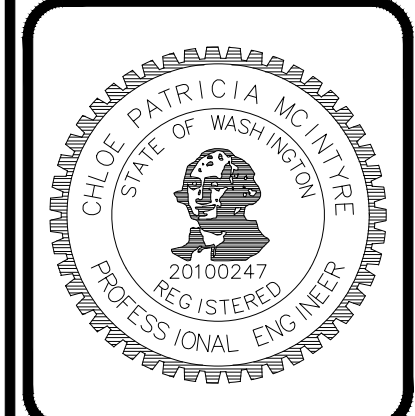
A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 16 NORTH RANGE 1 WEST, W.M.

AGENCY NO. HTE-22-0135
SHEET: 8 OF 12
HIDGN21-00021-100/PRELIMINARY
INDEX: 21-100 pre-det
JOB: 21-100

| CITY OF LACEY | |
|--|---|
| VERTICAL DATUM - NAVD 29 THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK CONTROL POINT NO. LACEY RAO 3" T.C. BRASS CAP CENTER OF 12" WIDE CONCRETE CURB CENTER OF NORTH END OF ROUNDABOUT, CENTER OF ACCESS ROAD, 570' SOUTH OF STEILACOOM ROAD ELEV. = 231.926 | MERIDIAN HORIZONTAL DATUM THURSTON COUNTY HIGH PRECISION SURVEY CONTROL NETWORK BASED ON CONTROL POINT NO. GP-3510-59 AND POINT NO. 7512. BEARING BETWEEN SAID POINTS EQUALS N29°22'41"E AND CITY OF LACEY BASED ON SURVEY REFERENCE NO. 17 |

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

DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: 1" = 80'
V _____
Y _____
N/A _____

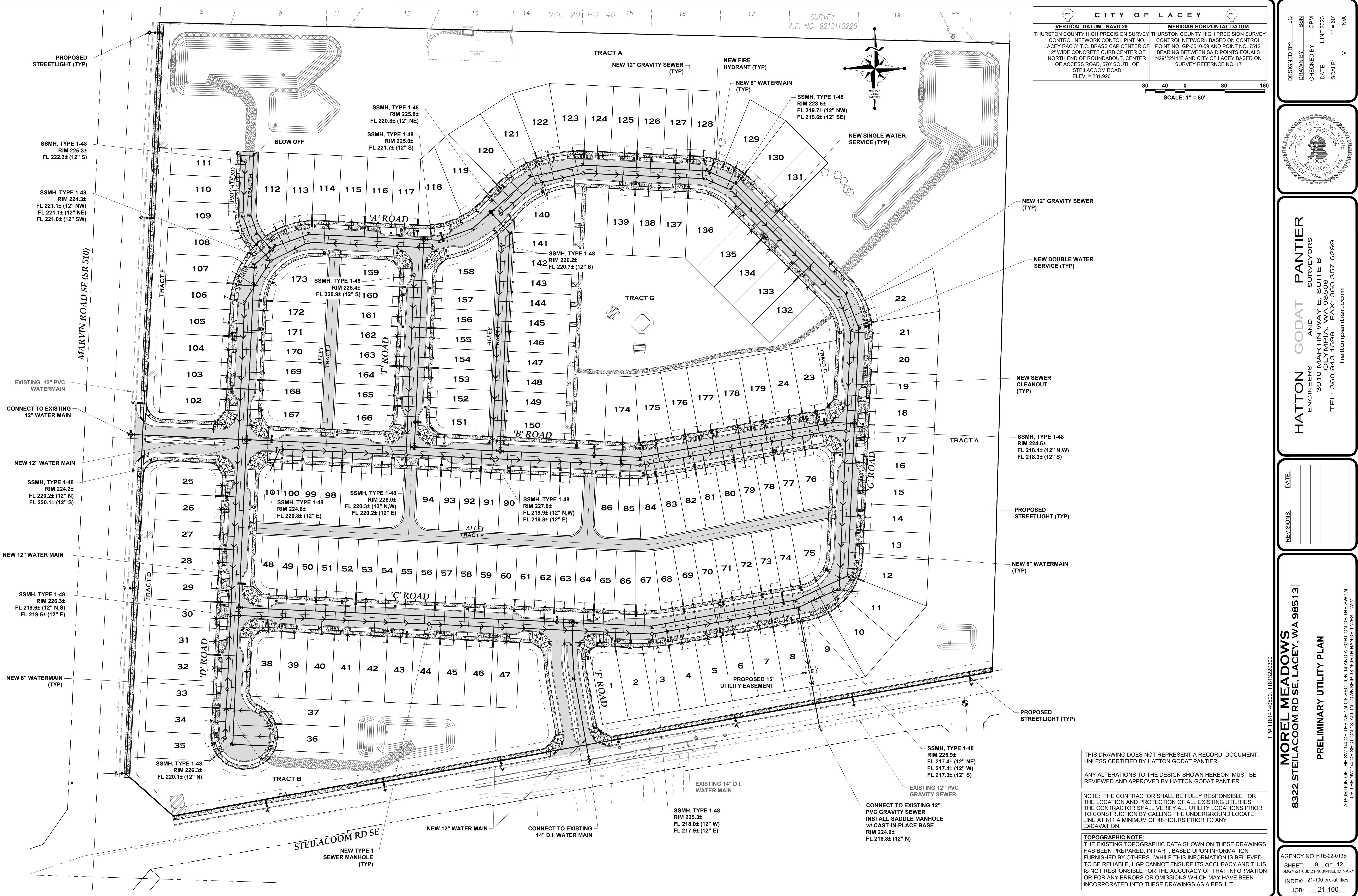


HATTON GODAT PANTIER
ENGINEERS AND SURVEYORS
3910 MARTIN WAY E, SUITE B
OLYMPIA, WA 98506
TEL: 360.943.1599 FAX: 360.357.6299
hattonpantier.com

DATE: _____
REVISIONS: _____

TP# 11814140500, 11813220300
MOREL MEADOWS
8322 STEILACOOM RD SE, LACEY, WA 98513
PRELIMINARY UTILITY PLAN

AGENCY NO. HTE-22-0135
SHEET: 9 OF 12
H:\DGN\21-000\21-100\PRELIMINARY
INDEX: 21-100 pre-Utilities
JOB: 21-100

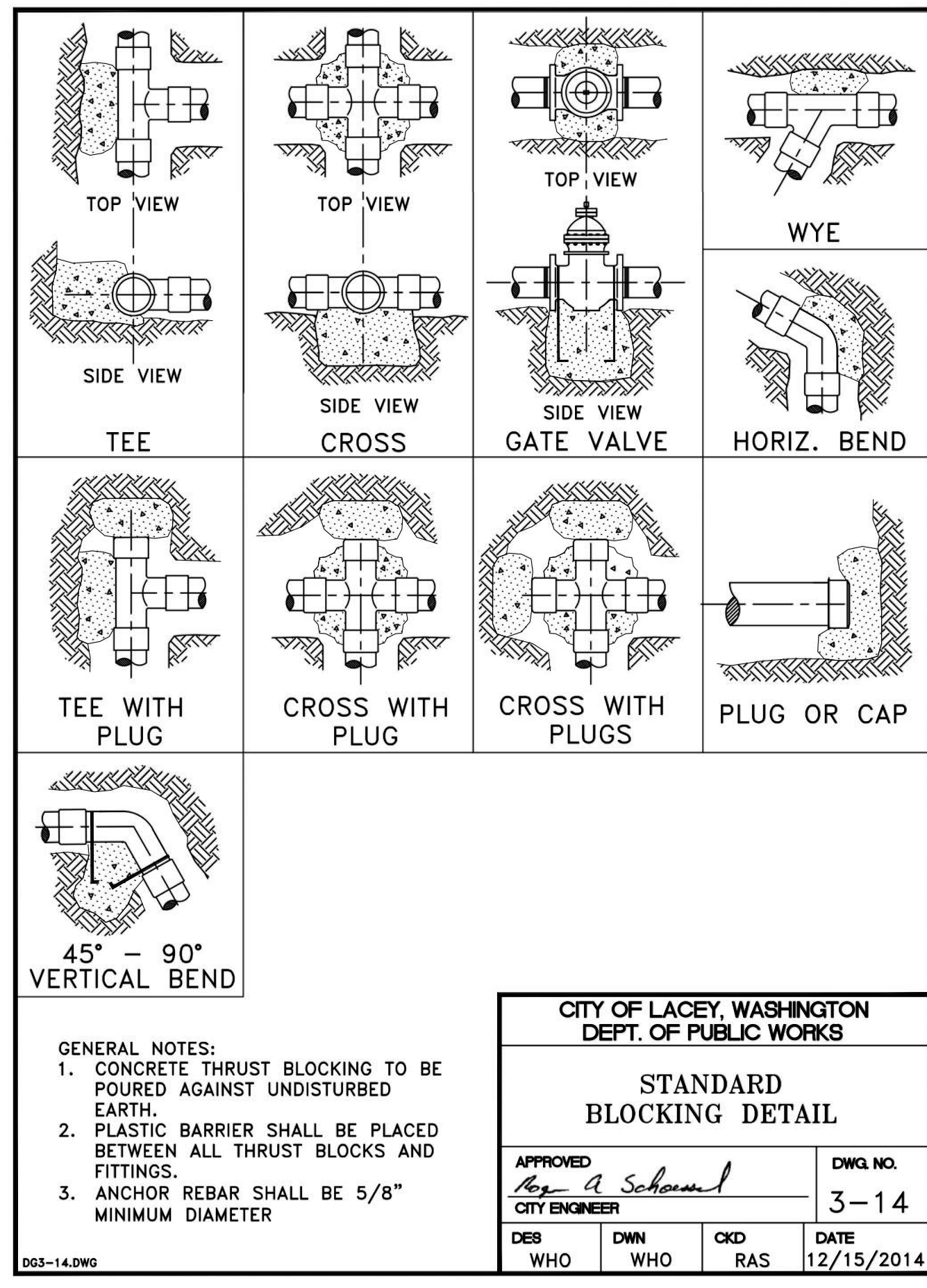


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TOPOGRAPHIC NOTE:
THE EXISTING TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, HGP CANNOT ENSURE ITS ACCURACY AND THIS IS NOT RESPONSIBLE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



THRUST LOADS

THRUST AT FITTINGS IN POUNDS AT 200 POUNDS PER SQUARE INCH OF WATER PRESSURE

| PIPE DIAMETER | 90° BEND | 45° BEND | 22-1/2° BEND | 11-1/4° BEND | DEAD END OR TEE |
|---------------|----------|----------|--------------|--------------|-----------------|
| 4" | 3,600 | 2,000 | 1,000 | 500 | 2,600 |
| 6" | 8,000 | 4,400 | 2,300 | 1,200 | 5,700 |
| 8" | 14,300 | 7,700 | 4,000 | 2,000 | 10,100 |
| 10" | 22,300 | 12,100 | 6,200 | 3,100 | 15,800 |
| 12" | 32,000 | 17,400 | 8,900 | 4,500 | 22,700 |
| 14" | 43,600 | 23,600 | 12,100 | 6,100 | 30,800 |
| 16" | 57,000 | 30,800 | 15,700 | 7,900 | 40,300 |

NOTES:

- BLOCKING SHALL BE COMMERCIAL CONCRETE POURED IN PLACE AGAINST UNDISTURBED EARTH. FITTING SHALL BE ISOLATED FROM CONCRETE THRUST BLOCK WITH PLASTIC OR SIMILAR MATERIAL.
- TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (S.F.):
EXAMPLE: 12" - 90° BEND IN SAND AND GRAVEL
32,000 LBS ÷ 3000 LB/S.F. = 10.7 S.F. OF AREA
- AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZE, PRESSURES AND SOIL CONDITIONS.
- BLOCKING SHALL BE ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

SAFE SOIL BEARING LOADS

FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET

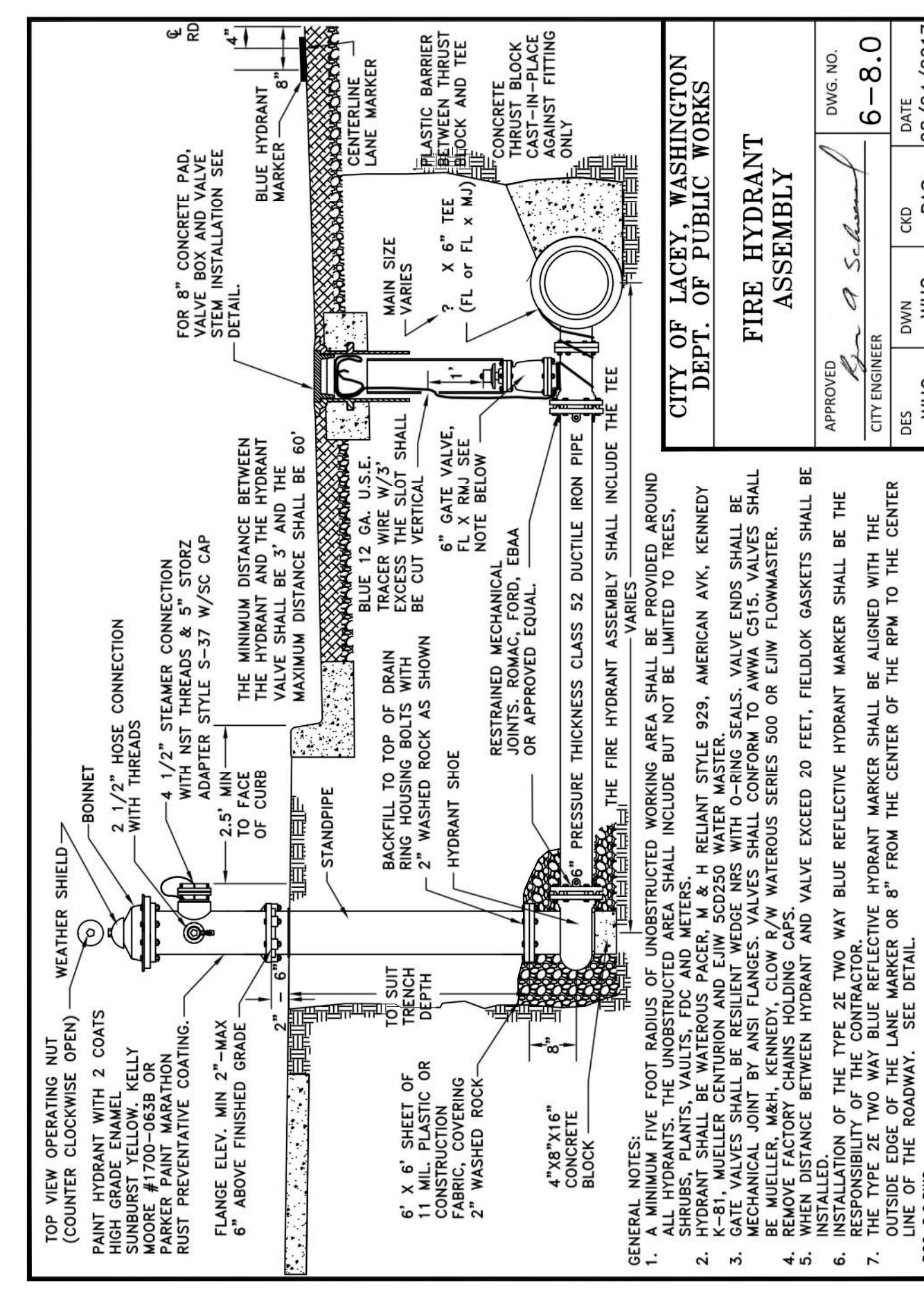
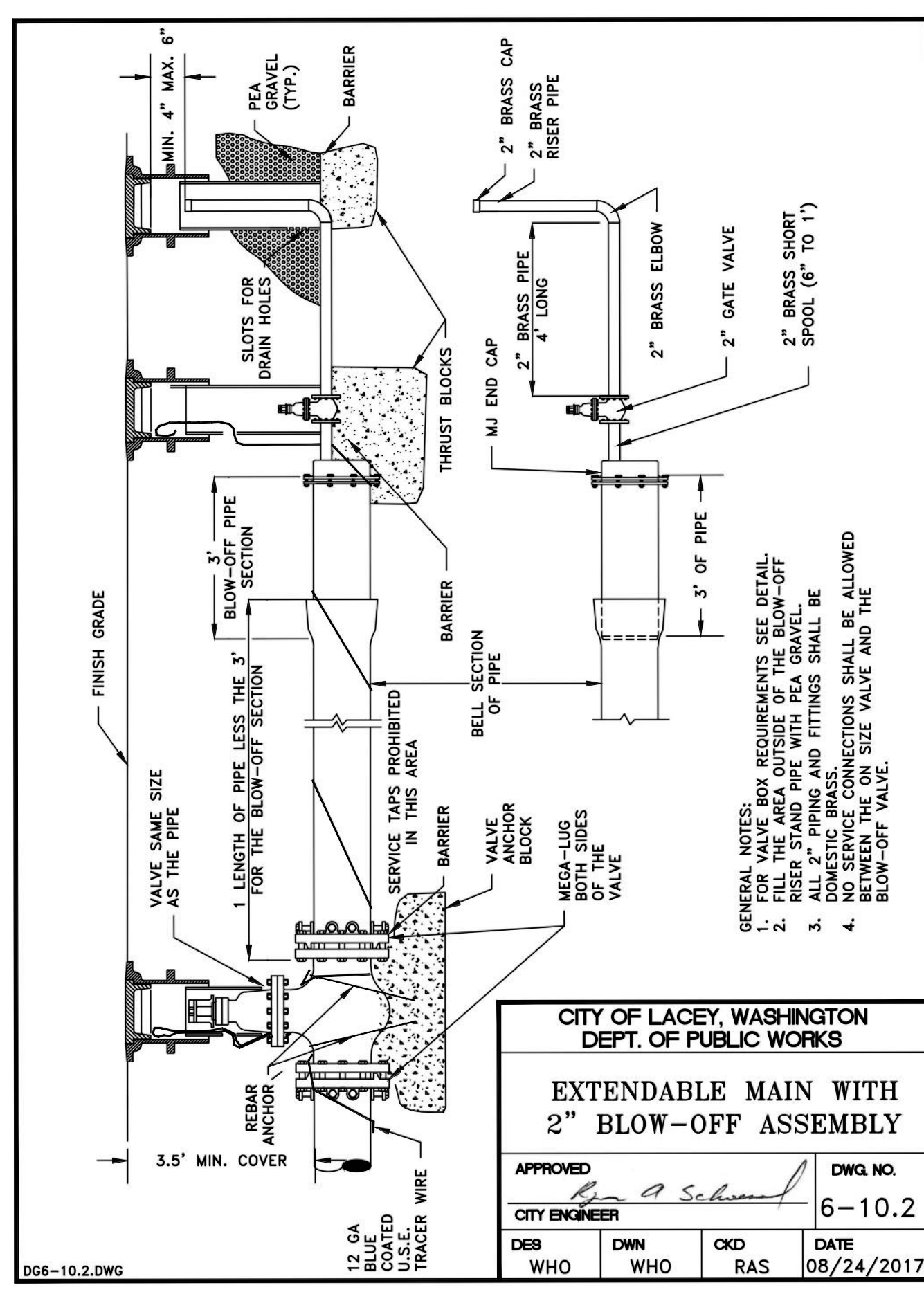
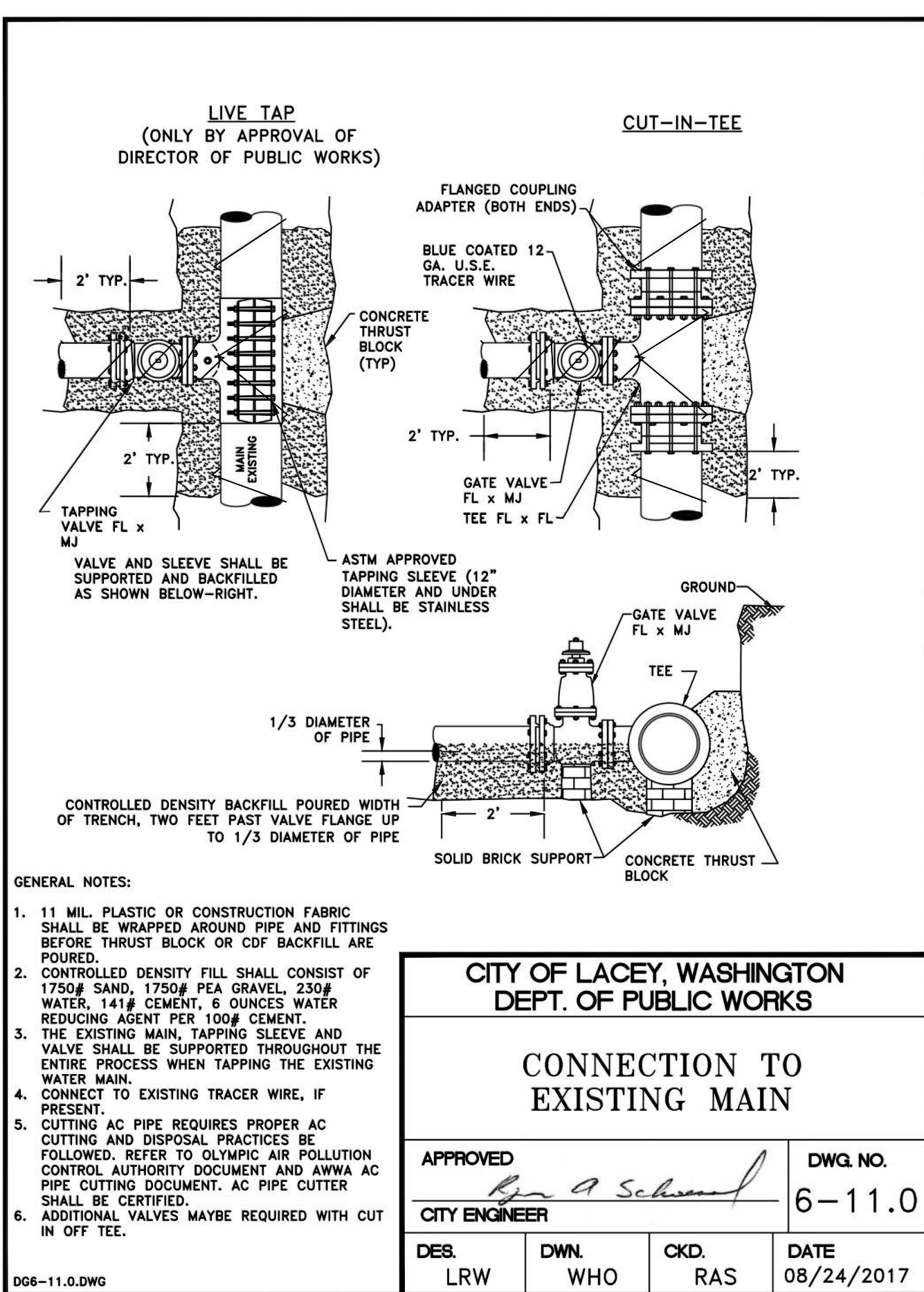
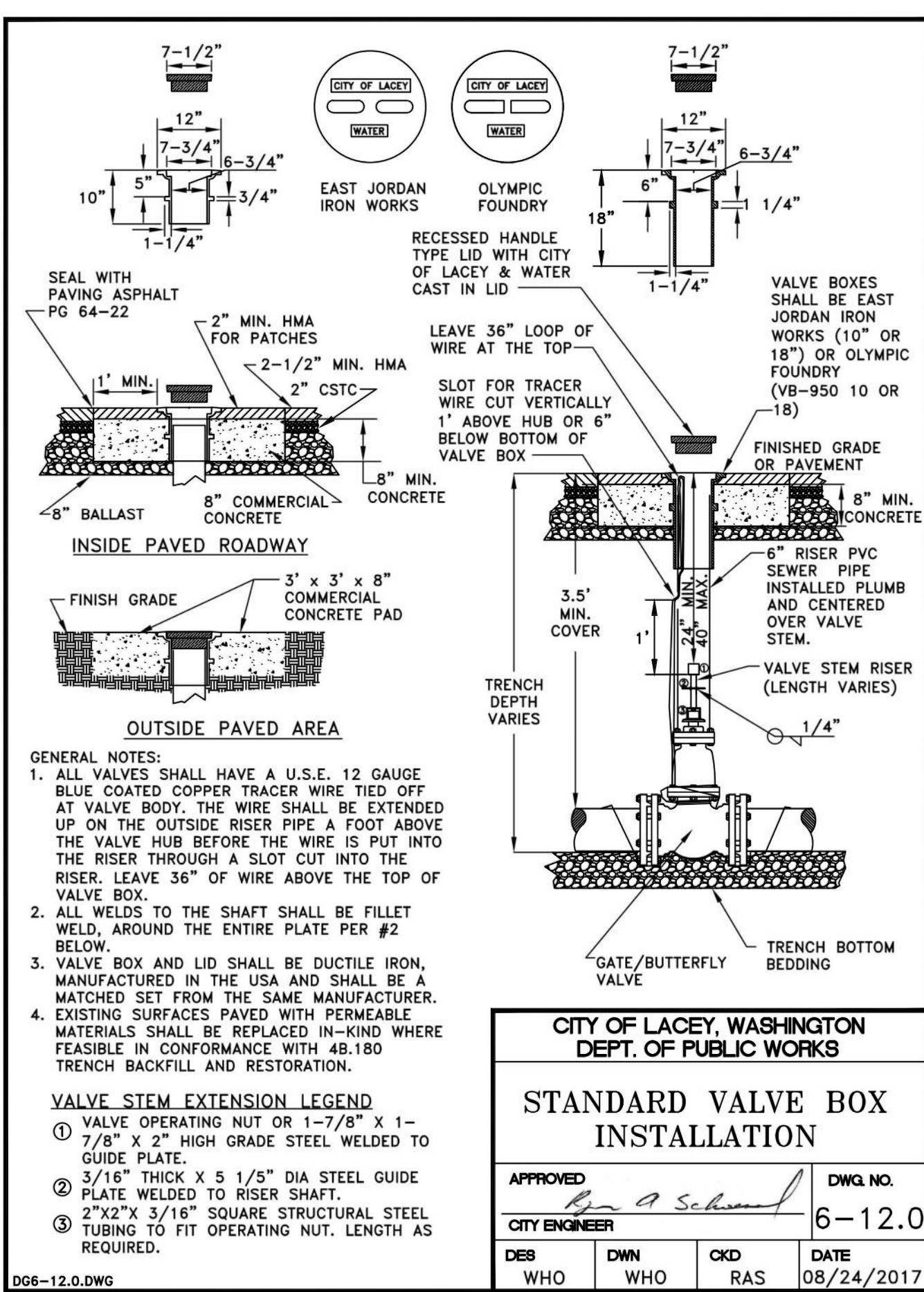
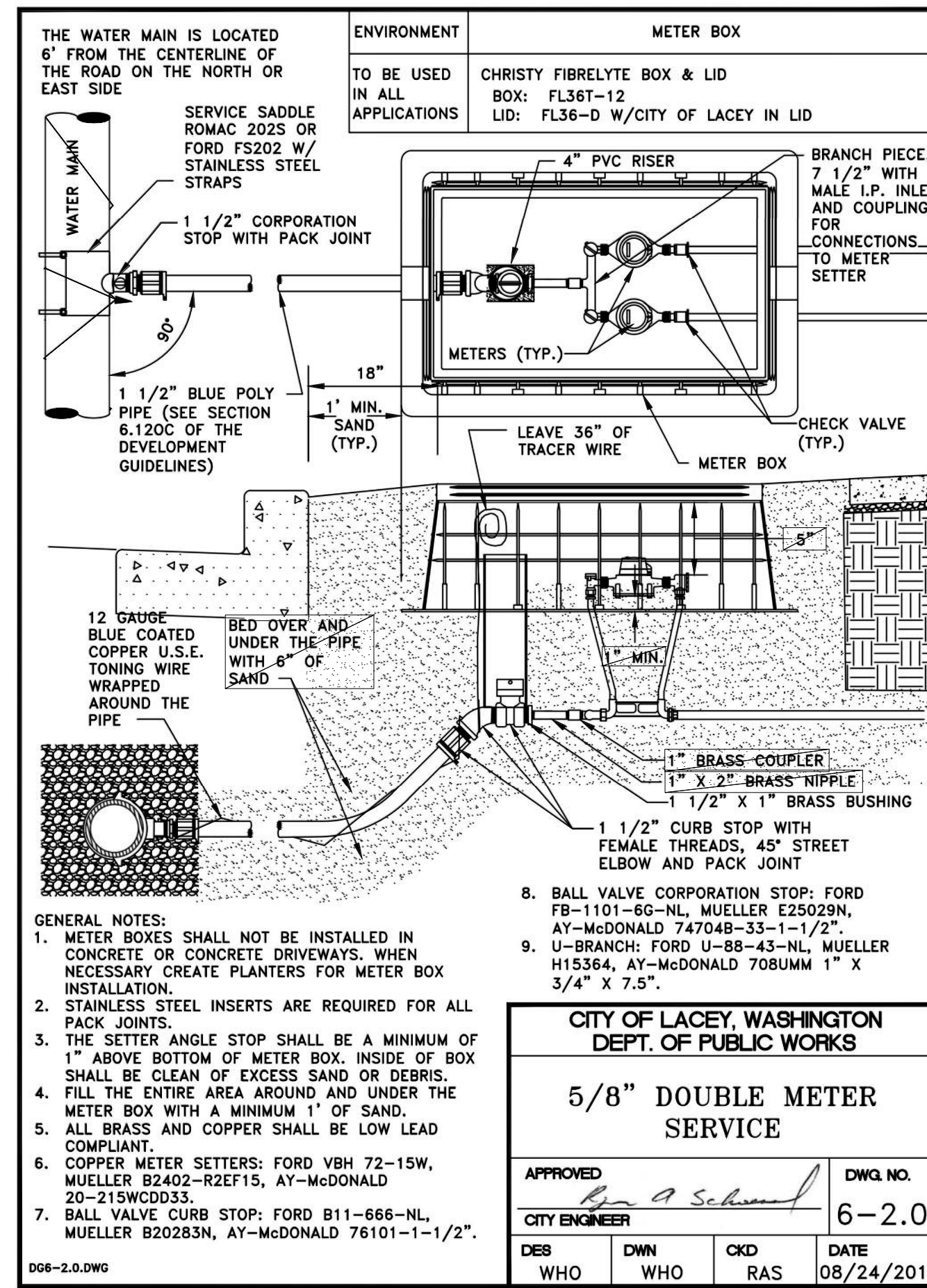
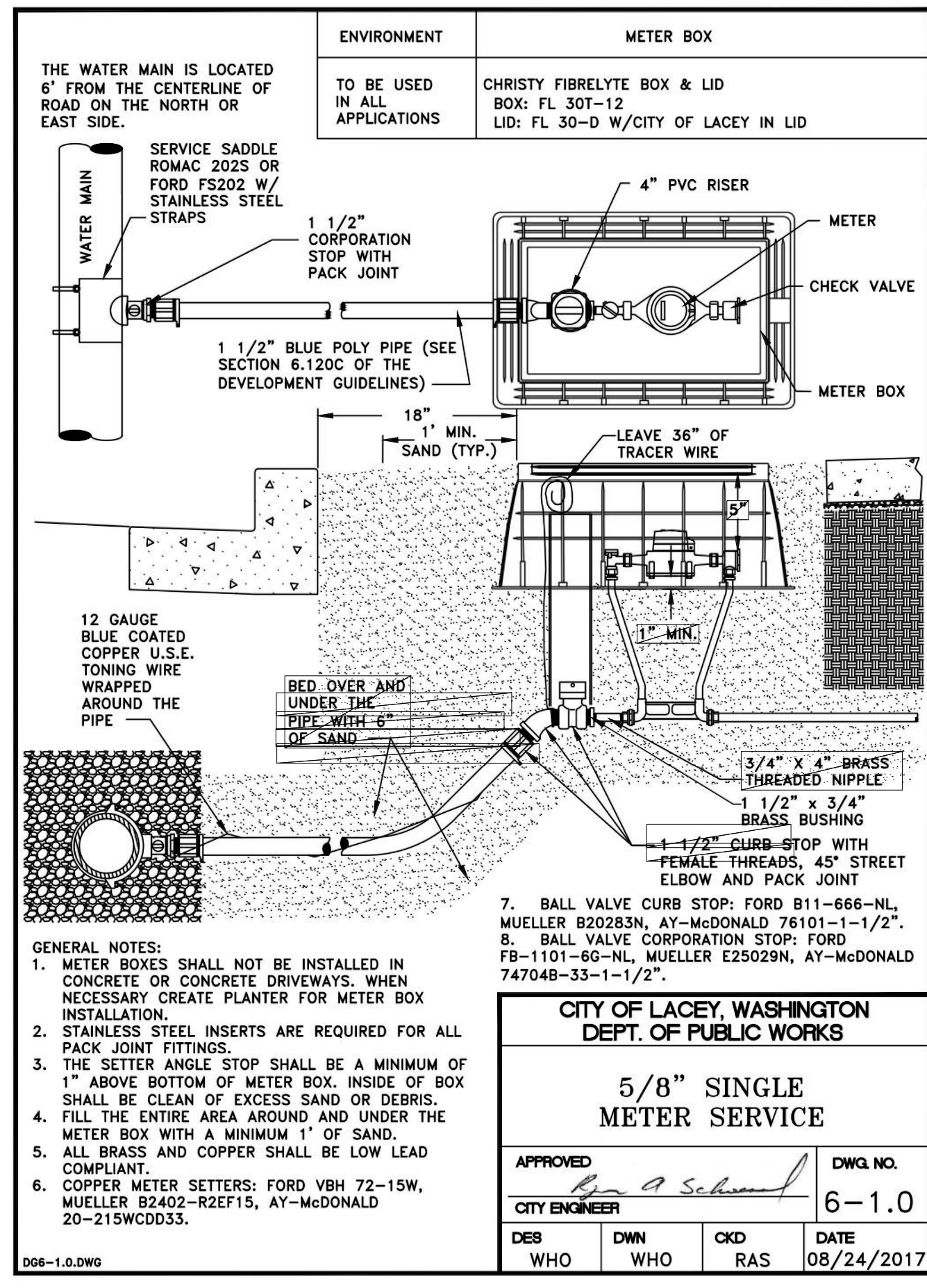
| SOIL | POUNDS PER SQUARE FOOT |
|----------------------------------|------------------------|
| MUCK, PEAT | 0 |
| SOFT CLAY | 1,000 |
| SAND | 2,000 |
| SAND & GRAVEL | 3,000 |
| SAND & GRAVEL CEMENTED WITH CLAY | 4,000 |
| HARD SHALE | 10,000 |

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

THRUST LOADS

APPROVED: *[Signature]* DWG. NO. 3-15
CITY ENGINEER

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

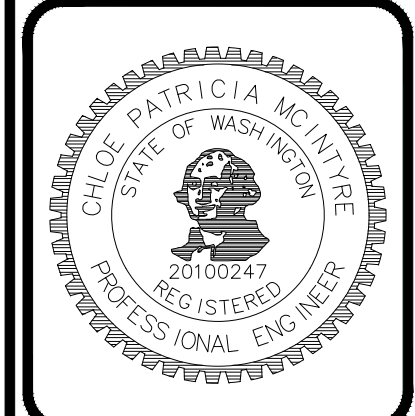


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ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY HATTON GODAT PANTIER.

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 911 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: N/A



HATTON GODAT PANTIER
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hatterpantier.com

DATE: _____
REVISIONS: _____

MOREL MEADOWS
8322 STEILACOOM RD SE, LACEY, WA 98513

PRELIMINARY UTILITY DETAILS - 1

AGENCY NO. HTE-22-0135
SHEET: 10 OF 12
H:\DGN\21-00021-100\PRELIMINARY
INDEX: 21-100 pre-det
JOB: 21-100

A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 16 NORTH RANGE 1 WEST, W.M.

GENERAL NOTES (WATER MAIN INSTALLATION)

- 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 6.030B FOR MORE DETAILED PIPE SPECIFICATIONS.
- 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.
- 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.
- EXISTING VALVES SHALL BE OPERATED BY CITY EMPLOYEES ONLY.
- HYDRANTS SHALL BE CITY APPROVED AS SPECIFIED ON THE HYDRANT DETAILS AND SHALL BE BAGGED UNTIL THE SYSTEM IS APPROVED.
- 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.
- 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.
- 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.
- 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.
- SEPARATION BETWEEN WATER AND SEWER SHALL BE MAINTAINED PER DOE STANDARDS. SEE DEVELOPMENT GUIDELINE CHAPTER 6.130 FOR MORE INFORMATION.
- A CONCRETE PAD PER DETAIL SHALL BE INSTALLED AROUND ALL VALVE BOXES AND BLOWOFFS THAT ARE NOT IN A PAVEMENT AREA.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- ALL VALVE BOX, BLOW-OFF AND MANHOLE LIDS SHALL BE CLEAN AND CLEAR OF ASPHALT OR CONCRETE BEFORE SCHEDULING A WALK THROUGH.
- 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.
- ALL WATER MAINS AND SERVICE LINES SHALL BE BEDDED PER DETAIL 6-26.0 AND MEETING THE PIPE BEDDING SPECIFICATION CHART REQUIREMENTS.
- 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.
- 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)

REVISED: 03/2014

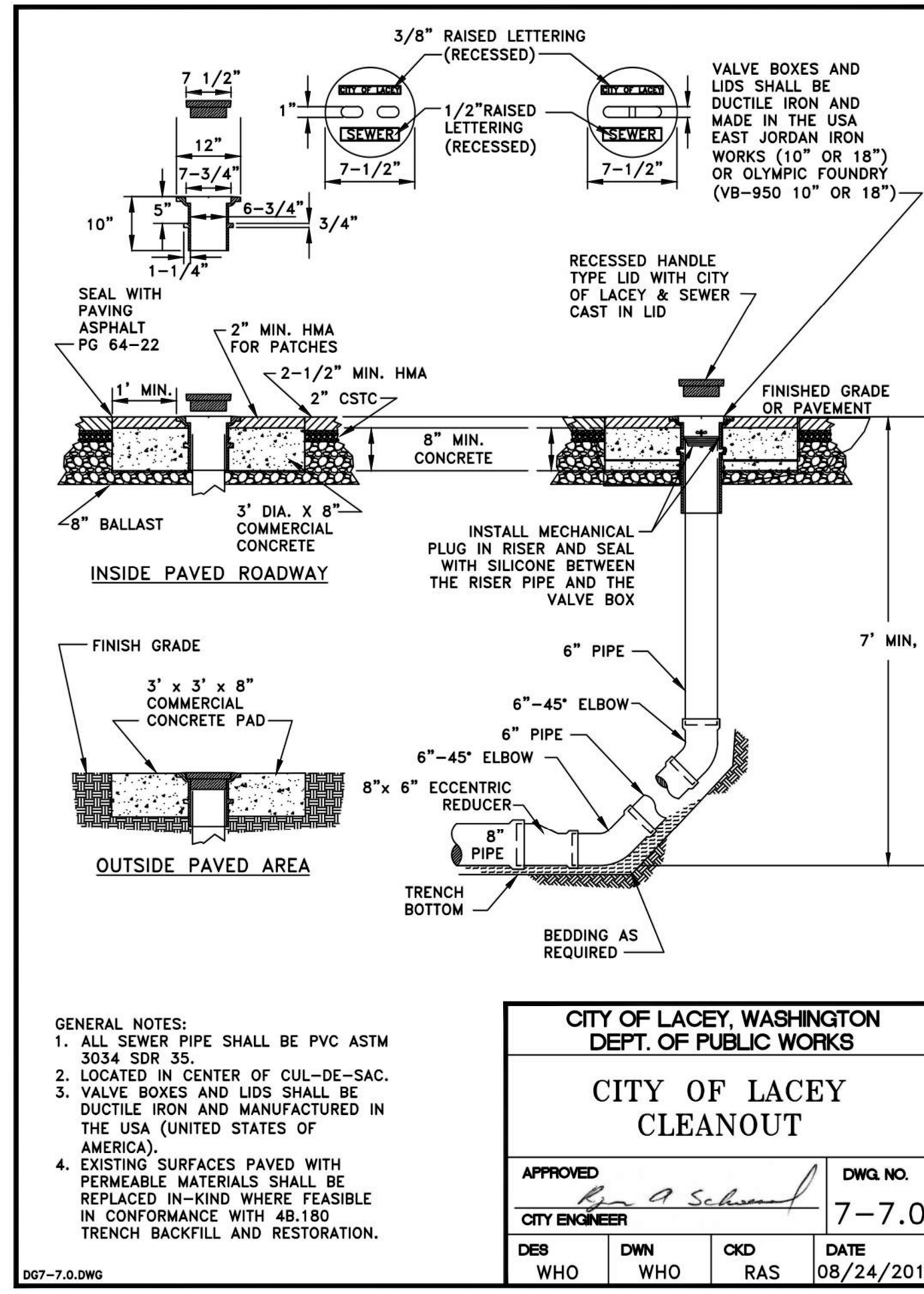
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NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR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

GENERAL NOTES (SANITARY SEWER MAIN INSTALLATION)

- GRAVITY SEWER MAIN SHALL BE PVC, ASTM D 3034 SDR 35 OR ASTM F 679 WITH JOINTS AND RUBBER GASKETS CONFORMING TO ASTM D 3212 AND ASTM F 477.
- PRE-CAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM C 478. MANHOLES SHALL BE TYPE 1-48 INCH MANHOLE UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL MANHOLE BASES SHALL BE POSITIVE SEAL TYPE AS MANUFACTURED BY PREDL SYSTEMS NORTH AMERICA INC. OR APPROVED EQUAL. JOINTS SHALL BE RUBBER GASKET CONFORMING TO ASTM C 443 AND SHALL BE GROUDED FROM THE INSIDE. LIFT HOLES SHALL BE GROUDED FROM THE OUTSIDE AND INSIDE OF THE MANHOLE. (SEE NOTE 1.) CONNECTION OF A PIPE LINE TO A SYSTEM WHERE A MANHOLE IS NOT AVAILABLE SHALL BE ACCOMPLISHED BY THE USE OF A SADDLE TYPE OR CAST-IN-PLACE MANHOLE. THIS IS ACCOMPLISHED BY POURING A CONCRETE BASE AND SETTING MANHOLE SECTIONS ON IT. THE EXISTING PIPE SHALL NOT BE CUT INTO UNTIL THE MANHOLE IS VACUUM TESTED AND APPROVED BY THE CITY. (SEE DETAIL)
- MANHOLE FRAMES AND LOGO LIDS SHALL BE EJ OR OLYMPIC FOUNDRY WSDOT STYLE DUCTILE IRON CASTING MARKED "CITY OF LACEY", "SEWER", "MADE IN USA", "CONFINED SPACE", "PERMIT REQUIRED" AND CONFORMING TO THE REQUIREMENTS OF ASTM A-30, CLASS 25. THE FRAMES AND LIDS SHALL BE FREE OF POROSITY, SHRINK CAVITIES, COLD SHUNTS, CRACKS, OR ANY SURFACE DEFECTS WHICH WOULD IMPAIR SERVICEABILITY. THE FRAMES AND LIDS SHALL BE MACHINE FINISHED OR GROUND ON SEATING SURFACES SO AS TO ASSURE A NON-ROCKING, SELF SEATING FIT IN ANY POSITION AND BE INTERCHANGEABLE IN OTHER STANDARD MANHOLE FRAMES.
LOCK-TYPE COVERS SHALL BE REQUIRED IN ALL MULTI-FAMILY COMPLEXES, ON SCHOOL GROUNDS, ON MANHOLES CONTAINING ODOR CONTROL DEVICES OR AS DETERMINED BY THE CITY. THE MANHOLE OPENING SHALL BE CENTERED OVER THE OUTLET CHANNEL REGARDLESS OF THE LOCATION OF THE LADDER RUNGS. ALL CASTING SHALL BE COATED WITH A BITUMINOUS COATING PRIOR TO DELIVERY TO THE JOB SITE.
- SIDE SEWER SERVICES SHALL BE PVC, ASTM D 3034 SDR 35 WITH FLEXIBLE GASKET JOINTS (SEE DETAIL). SIDE SEWER CONNECTIONS SHALL BE MADE BY A TAP TO AN EXISTING MAIN OR A WYE BRANCH FROM A NEW MAIN CONNECTED ABOVE THE SPRING LINE OF THE PIPE. WHEN A TAP IS USED TO CONNECT A NEW SERVICE LATERAL TO AN EXISTING SEWER MAIN, TELEVISION FROM THE CLOSEST MANHOLE TO 15 FEET PAST THE TAP IS REQUIRED. FOREIGN OBJECTS AND DEBRIS SHALL BE REMOVED BY HIGH PRESSURE CLEANING AND/OR VACUUM REMOVAL.
- ALL SEWER MAINS SHALL BE FIELD STAKED FOR GRADES AND ALIGNMENT IN ACCORDANCE WITH SECTION 7A.030 OF THE DEVELOPMENT GUIDELINES.
- ALL PLASTIC PIPE AND SERVICES SHALL BE INSTALLED WITH CONTINUOUS GREEN TRACER TAPE 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. TAPE SHALL BE TERRA TAPE "D" OR APPROVED EQUAL. THE TAPE SHALL BE FURNISHED BY THE CONTRACTOR.
- ALL SIDE SEWER LOCATIONS SHALL BE MARKED ON THE FACE OF THE CURB WITH AN EMBOSSED "S" 3 INCH HIGH AND 1/4 INCH INTO CONCRETE.
- BEDDING OF THE SEWER MAIN SHALL BE A MINIMUM 6 INCHES OF 3/8 INCH MINUS PEA GRAVEL UNDER THE PIPE AND A MINIMUM OF 12 INCHES OF 3/8 INCH MINUS PEA GRAVEL OVER THE PIPE. WHEN WORKING IN SENSITIVE SOILS A BARRIER ABOVE THE PEA GRAVEL MAY BE REQUIRED TO PREVENT THE FINE SOILS FROM MIGRATING INTO THE PEA GRAVEL. ALL PEA GRAVEL SHALL BE WASHED. COMPACTION OF THE BACKFILL MATERIAL SHALL BE REQUIRED IN ACCORDANCE WITH THE ABOVE MENTIONED SPECIFICATION (SEE NOTE #1). THE APPLICABLE CHAPTER 4-8 TRENCH RESTORATION DETAILS AND DETAIL 7-20 SHALL BE USED.
- INSTALL A 4' X 4' SQUARE X 8 INCH THICK CONCRETE PAD WITH #4 REBAR AROUND ALL MANHOLE FRAMES AND CLEANOUTS THAT ARE NOT IN A PAVEMENT AREA.
- ALL LINES SHALL BE HIGH VELOCITY CLEANED AND PRESSURE TESTED PRIOR TO PAVING IN CONFORMANCE WITH THE ABOVE REFERENCED SPECIFICATIONS. SEE NOTE 1. HYDRANT FLUSHING OF LINES IS NOT AN ACCEPTABLE CLEANING METHOD. TESTING OF THE SANITARY SEWER MAIN SHALL INCLUDE VIDEOTAPING OF THE MAIN BY THE CONTRACTOR. IMMEDIATELY PRIOR TO VIDEOTAPING, ENOUGH WATER SHALL BE RUN DOWN THE LINE SO IT COMES OUT THE LOWER MANHOLE. A COPY OF THE VIDEO TAPE SHALL BE SUBMITTED TO THE CITY OF LACEY INSPECTOR. ACCEPTANCE OF THE LINE WILL BE MADE AFTER THE TAPE HAS BEEN REVIEWED AND APPROVED BY THE INSPECTOR. A VACUUM TEST OF ALL MANHOLES IN ACCORDANCE WITH LACEY STANDARD IS ALSO REQUIRED. TESTING SHALL TAKE PLACE AFTER ALL UNDERGROUND UTILITIES ARE INSTALLED AND COMPACTION OF THE ROADWAY SUB GRADE IS COMPLETED. AFTER THE PAVING AND RAISING OF MANHOLES ARE COMPLETE, THE DEVELOPER SHALL CLEAN AND VIDEOTAPE THE SEWER CONVEYANCE SYSTEM AGAIN AT THE DEVELOPER'S EXPENSE. THE METHOD OF CLEANING SHALL BE HIGH VELOCITY WATER PRESSURE CLEANING. ALL ROCKS AND DEBRIS SHALL BE REMOVED AND DISPOSED AT THE DEVELOPER'S EXPENSE.
- CONTRACTORS SHALL BE RESPONSIBLE FOR CLEANUP OF ANY DEBRIS IN NEW OR EXISTING MANHOLES AND MAINS ASSOCIATED WITH THE PROJECT AFTER THE NEW LINES ARE CLEANED AS OUTLINED ABOVE. THE SEWER SYSTEM SHALL BE TELEVISIONED TO ASSURE THE SYSTEM IS CLEAN.
- ENCASEMENT MATERIAL SHALL INCLUDE 1/4 INCH STEEL, DUCTILE IRON AND IN SPECIAL OR UNUSUAL CASES C-900 DR 14 PVC PIPE MAY BE ALLOWED IF APPROVED BY THE DIRECTOR OF PUBLIC WORKS IN ADVANCE. CONCRETE, CDF AND OTHER METHODS OF ENCASEMENT SHALL NOT BE ALLOWED.

REVISED: 03/2014



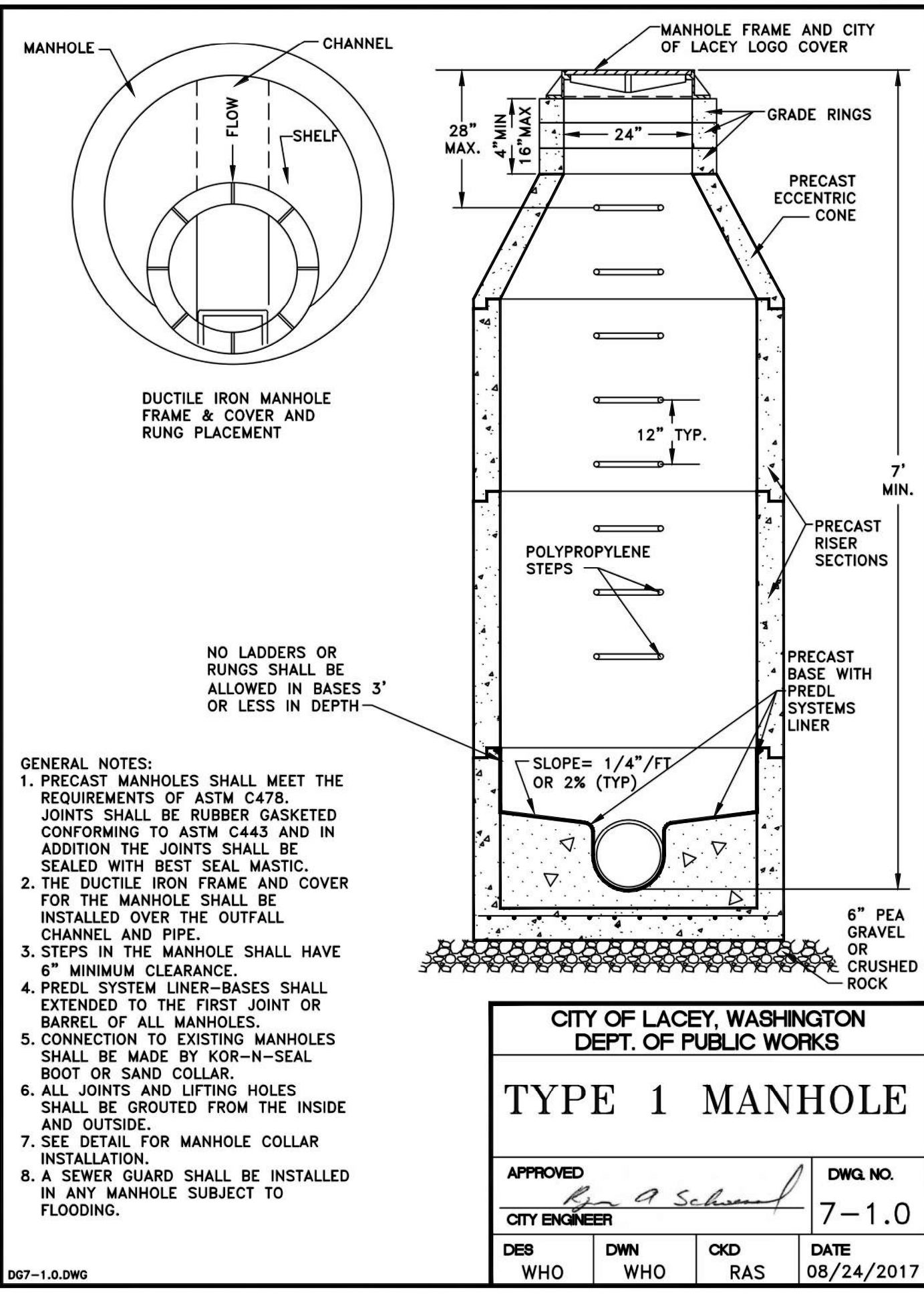
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CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

**CITY OF LACEY
CLEANOUT**

APPROVED: *[Signature]* DWG. NO. 7-7.0
CITY ENGINEER

| | | | |
|---------|---------|---------|-----------------|
| DES WHO | DWN WHO | CKD RAS | DATE 08/24/2017 |
|---------|---------|---------|-----------------|



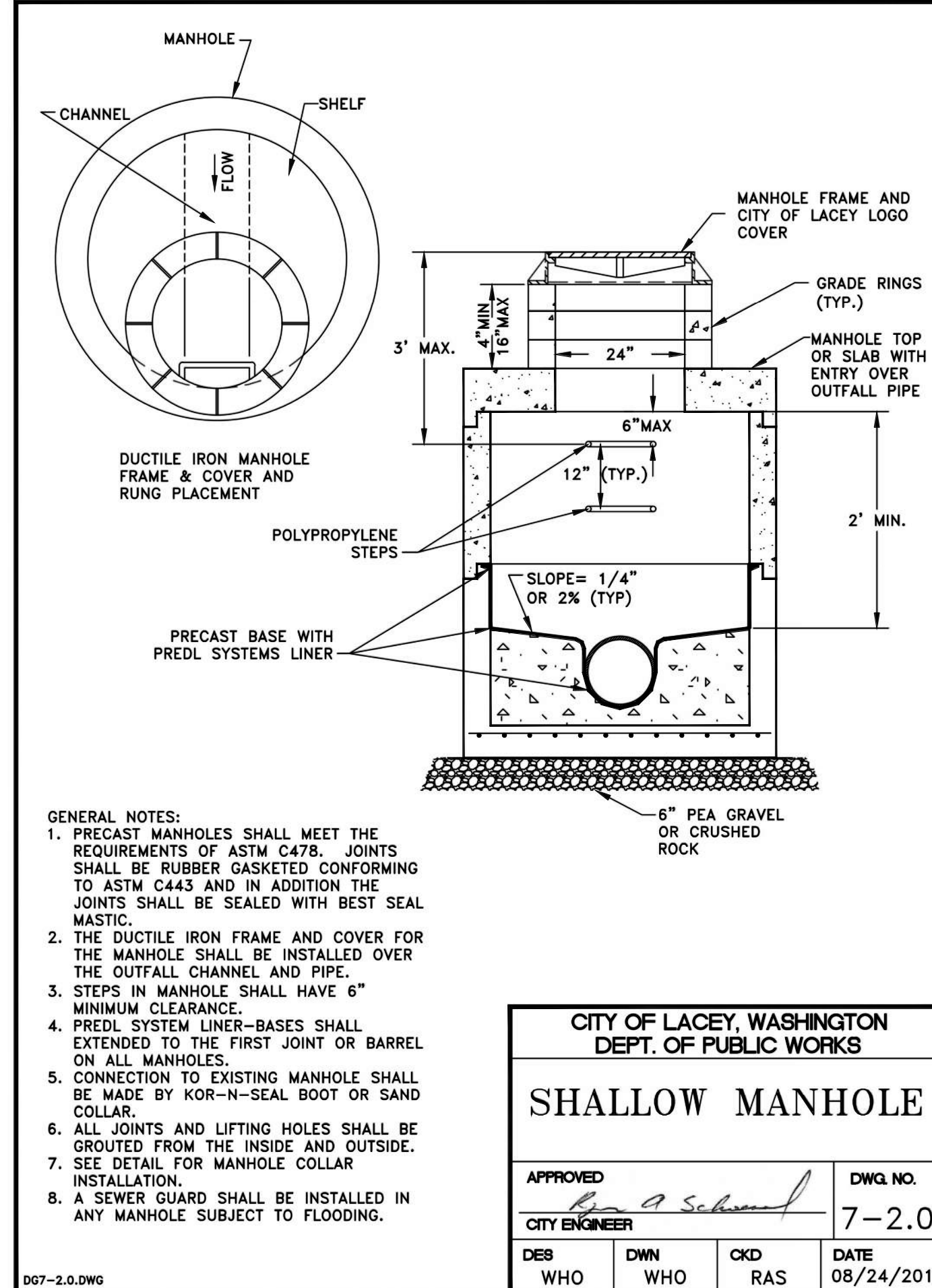
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CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

TYPE 1 MANHOLE

APPROVED: *[Signature]* DWG. NO. 7-1.0
CITY ENGINEER

| | | | |
|---------|---------|---------|-----------------|
| DES WHO | DWN WHO | CKD RAS | DATE 08/24/2017 |
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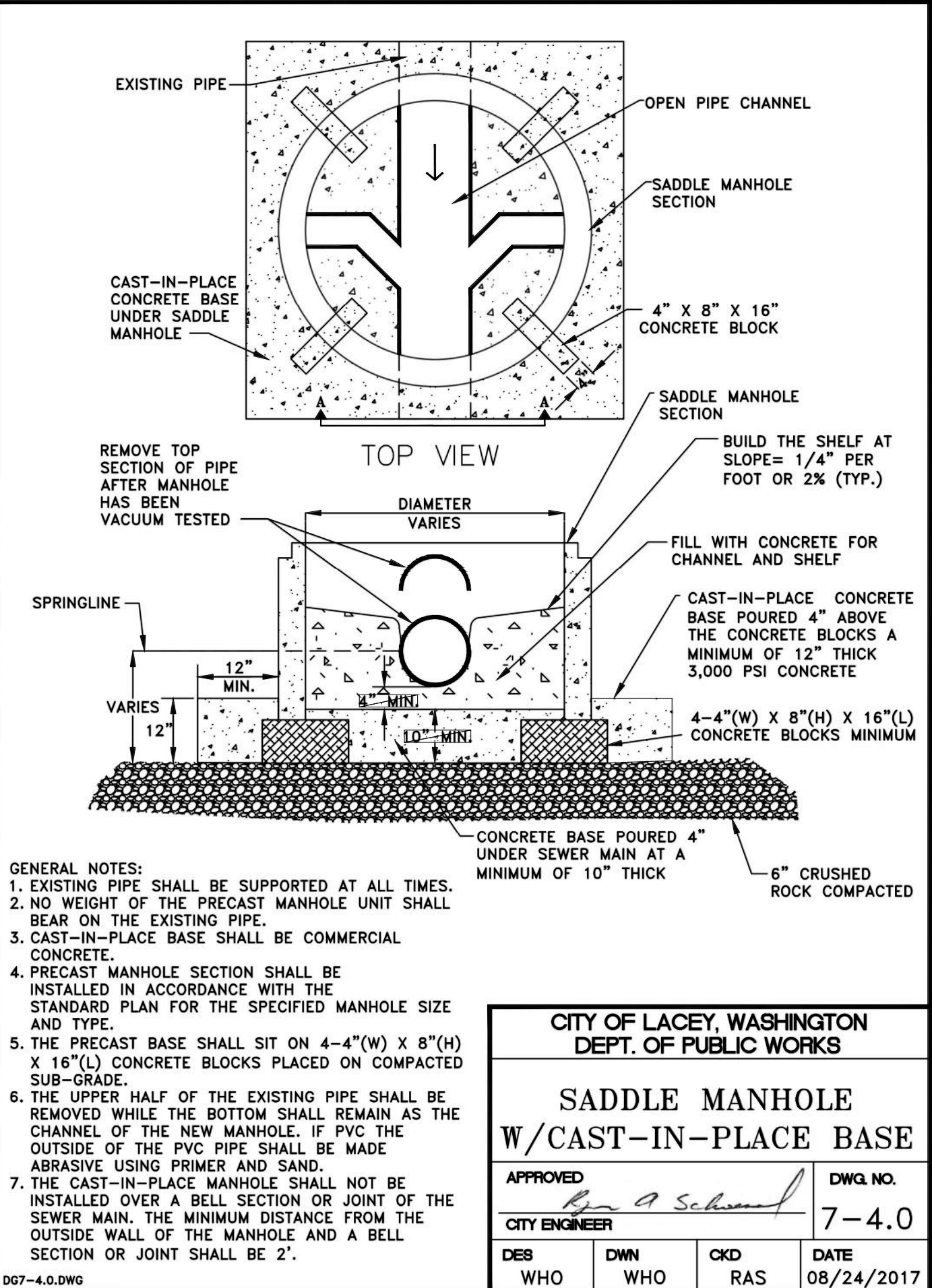
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CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

SHALLOW MANHOLE

APPROVED: *[Signature]* DWG. NO. 7-2.0
CITY ENGINEER

| | | | |
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| DES WHO | DWN WHO | CKD RAS | DATE 08/24/2017 |
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007-4.0.DWG

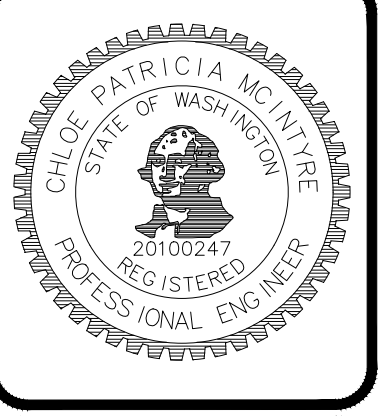
CITY OF LACEY, WASHINGTON
DEPT. OF PUBLIC WORKS

**SADDLE MANHOLE
W/CAST-IN-PLACE BASE**

APPROVED: *[Signature]* DWG. NO. 7-4.0
CITY ENGINEER

| | | | |
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| DES WHO | DWN WHO | CKD RAS | DATE 08/24/2017 |
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DESIGNED BY: JG
DRAWN BY: BSN
CHECKED BY: CPM
DATE: JUNE 2023
SCALE: N/A



**HATTON GODAT
ENGINEERS
AND
SURVEYORS**

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huttonpantier.com

DATE: _____
REVISIONS: _____

MOREL MEADOWS
8322 STEILACOOM RD SE, LACEY, WA 98513

PRELIMINARY UTILITY DETAILS - 2

A PORTION OF THE SW 1/4 OF THE NE 1/4 OF SECTION 14 AND A PORTION OF THE SW 1/4 OF THE NW 1/4 OF SECTION 13, ALL IN TOWNSHIP 18 NORTH RANGE 1 WEST, W.M.

AGENCY NO. HTE-22-0135
SHEET: 11 OF 12
H:\DGN\21-00021-100\PRELIMINARY
INDEX: 21-100 pre-det
JOB: 21-100