

EROSION CONTROL NOTES:

1. ALL STRIPPING, GRUBBING, GRADING, AND COMPACTION ARE TO BE DONE IN ACCORDANCE WITH THE SOIL ENGINEER'S REQUIREMENTS.
2. THE CONTRACTOR IS ADVISED TO MAKE HIS OWN TAKEOFF OF EARTHWORK QUANTITIES AND DETERMINE HIS OWN QUANTITIES FOR BIDDING. THE CONTRACTOR IS ADVISED TO DIG TEST HOLES OR USE WHATEVER METHOD HE DEEMS NECESSARY TO DETERMINE EARTHWORK QUANTITIES. EARTHWORK QUANTITIES MAY VARY DEPENDING ON SUCH VARIABLES AS COMPACTION, SHRINKAGE, CONTRACTOR'S METHOD OF OPERATION, AND ACCURACY OF THE EARTHWORK TAKEOFF. WITH THE SIGNING OF THE CONTRACT FOR THE CONSTRUCTION OF THESE IMPROVEMENTS, THE CONTRACTOR AGREES THAT HIS COST FOR CONSTRUCTING THE GRADING IMPROVEMENTS AND DISPOSAL OF THE EXCESS MATERIAL IF NECESSARY, IS SATISFACTORY AND THERE WILL BE NO ADDITIONAL CHARGE FOR THIS ITEM.
3. THERE SHOULD BE NO EXCAVATING OR FILLING WITHIN 2 FEET OF THE PROPERTY LINE AS PER CHAPTER J OF THE IBC.
4. THIS PROJECT WILL NOT INCREASE OR CONCENTRATE STORMWATER RUNOFF ONTO ADJACENT PARCELS. CROSS LOT DRAINAGE WILL NOT BE ALLOWED.

RECOMMENDED CONSTRUCTION SEQUENCE FOR EROSION CONTROL:

1. PRE-CONSTRUCTION MEETING.
2. FLAG OR FENCE CLEARING LIMITS.
3. POST NOTICE OF CONSTRUCTION ACTIVITY PHONE NUMBER OF EROSION SEDIMENT CONTROL SUPERVISOR.
4. INSTALL CATCH BASIN PROTECTION IF REQUIRED.
5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).
7. CONSTRUCT SEDIMENT PONDS AND TRAPS.
8. GRADE AND STABILIZE CONSTRUCTION ROADS.
9. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.
10. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY OF KALAMA STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
11. RELOCATE SURFACE WATER CONTROLS AND EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CITY OF KALAMA EROSION AND SEDIMENT CONTROL STANDARDS.
12. COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING OR EQUIVALENT.
13. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS.
14. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
15. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BEST MANAGEMENT PRACTICES REMOVED IF APPROPRIATE.

ARCHAEOLOGY NOTE:

IN THE EVENT ANY ITEM OF ARCHAEOLOGICAL INTEREST IS UNCOVERED DURING THE COURSE OF A PERMITTED OR APPROVED GROUND DISTURBING ACTION OR ACTIVITY ALL GROUND-DISTURBING ACTIVITY SHALL IMMEDIATELY CEASE. THE APPLICANT SHALL IMMEDIATELY NOTIFY THE CITY OF KALAMA PLANNING OFFICIAL AND DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION IN OLYMPIA WASHINGTON.

GENERAL EROSION PREVENTION & SEDIMENT CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO ANY LAND DISTURBING ACTIVITY INCLUDING CLEARING OR GRADING. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE APPROVED BY THE CITY EROSION SPECIALIST PRIOR TO THE COMMENCEMENT OF WORK. AN ON-SITE INSPECTION SHALL BE REQUESTED WHEN EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND PRIOR TO COMMENCEMENT OF WORK. ONCE APPROVED, THE SITE MUST BE MAINTAINED THROUGH THE LIFE OF THE PROJECT, AS SHOWN ON THE PLANS. ADDITIONAL MEASURES MAY BE REQUIRED TO MEET THE PROVISIONS OF EROSION PREVENTION AND SEDIMENT CONTROL.
2. EROSION AND SEDIMENT CONTROL BMPs SHALL BE SITED, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS IN THE CITY OF KALAMA'S LATEST VERSION OF GENERAL REQUIREMENTS AND STANDARD DETAILS, MANUAL AND THE WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, WHERE THE CITY OF KALAMA GENERAL REQUIREMENTS SHALL TAKE PRECEDENCE.
3. THE DEVELOPER AND/OR OWNER IS RESPONSIBLE FOR MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL BMPs DURING AND AFTER INSTALLATION OF ALL UTILITY WORK ASSOCIATED WITH UTILITY TRENCHES.
4. PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAIN INLETS SHALL BE PROTECTED DOWN SLOPE FROM ANY DISTURBED OR CONSTRUCTION AREAS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA. CLEAN INLET FILTER AS NECESSARY TO MAINTAIN DRAINAGE. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITE WORK.
5. NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT IMMEDIATELY UPON INSTALLATION. THE CONTRACTOR SHALL NOT ALLOW SEDIMENT OR DEBRIS TO ENTER NEW OR EXISTING PIPES, CATCH BASINS OR INFILTRATION SYSTEMS. IF THIS OCCURS, THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS, DRYWELLS, AND STORM PIPES IMMEDIATELY. FINAL ACCEPTANCE WILL NOT BE ISSUED BY THE CITY UNTIL THIS OCCURS.
6. PRIOR TO LEAVING A CONSTRUCTION SITE OR DISCHARGING INTO AN INFILTRATION SYSTEM, SEDIMENT-LADEN WATER SHALL PASS THROUGH A SEDIMENT POND, TRAP, OR OTHER APPROVED BMP SYSTEM.
7. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPs). FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL BE EXPOSED AND UNWORKED FOR MORE THAN SEVEN (7) DAYS.
8. SOIL STOCKPILES SHALL BE STABILIZED FROM EROSION, PROTECTED WITH SEDIMENT TRAPPING MEASURES, AND WHEN POSSIBLE, BE LOCATED AWAY FROM STORM DRAIN INLETS, WATER WAYS AND DRAINAGE CHANNELS.
9. CONSTRUCTION ROADS AND PARKING AREAS SHALL BE STABILIZED WHEREVER THEY ARE CONSTRUCTED, WHETHER PERMANENT OR TEMPORARY, FOR THE USE OF CONSTRUCTION TRAFFIC.
10. IF THE BMPs APPLIED TO A SITE ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, STORM FACILITIES OR PUBLIC RIGHT-OF-WAY, THEN THE CITY SHALL REQUIRE ADDITIONAL BMPs.
11. IF THE CITY INSPECTOR OR ENGINEER(S) HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR IMPROPER EROSION PREVENTION BMPs, CITATIONS AND/OR A STOP WORK ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY OF KALAMA.

PROTECTION OF ADJACENT PROPERTIES, ROAD/STREETS AND PAVED SURFACES:

1. PROVIDE A 12-INCH DEEP PAD OF CRUSHED ROCK FOR A DISTANCE OF 100 FEET INTO THE SITE FOR ALL ACCESS POINTS UTILIZED BY CONSTRUCTION EQUIPMENT AND TRUCKS. PAD WIDTH SHALL BE A MINIMUM OF 20 FEET. ALL VEHICLES LEAVING THE SITE SHALL EGRESS ACROSS THE PAD. ACCUMULATED SEDIMENT SHALL BE PERIODICALLY REMOVED. OR ADDITIONAL ROCK SHALL BE PLACED UPON THE PAD SURFACE. ROCK SHALL BE CLEAN 4-INCH TO 8-INCH QUARRY SPALLS. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS SHALL BE REMOVED IMMEDIATELY. MECHANICAL BROOM SWEEPERS ARE NOT ALLOWED.
2. IF SEDIMENT, MUD OR DEBRIS IS TRANSPORTED ONTO A PAVED SURFACE OR ROADWAY, THE PAVED SURFACES SHALL BE THOROUGHLY CLEANED WITH HIGH EFFICIENCY STREET SWEEPERS AT THE END OF EACH WORKDAY, OR MORE OFTEN IF NECESSARY. PUBLICLY TRAVELED PAVED SURFACES NEED TO BE CLEANED IMMEDIATELY. SIGNIFICANT SOIL DEPOSITS SHALL BE REMOVED FROM ROADS BY SHOVELING AND SWEEPING. STREET WASHING IS NOT ALLOWED UNLESS APPROVED BY THE DIRECTOR AND ONLY AFTER SEDIMENT IS REMOVED IN THE MANNER DESCRIBED ABOVE. MECHANICAL BROOM SWEEPERS ARE NOT ALLOWED.
3. SLURRY AND CUTTINGS SHALL BE VACUUMED DURING CUTTING AND SURFACING OPERATIONS. COLLECTED SLURRY AND CUTTINGS SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.
4. A WHEEL WASH MAY BE REQUIRED IF CONSTRUCTION ENTRANCE IS NOT SUFFICIENT IN PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT.
5. WHEEL WASH SHALL BE PER THE WASHINGTON DEPARTMENT OF ECOLOGY STORMWATER MANUAL.
6. INSTALL SEDIMENT FENCE PRIOR TO BUILDING CONSTRUCTION AND/OR EXCAVATION TO PREVENT SILT INTRUSION UPON ADJACENT LOTS. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE LOTS HAVE THE SAME OWNER DURING CONSTRUCTION, THE SILT FENCE ALONG THE COMMON LOT LINE MAY BE ELIMINATED.
7. PROPOSED PERMEABLE PAVEMENT AREAS SHALL BE SHOWN ON THE EROSION CONTROL PLAN. PERMEABLE PAVEMENT AREAS SHALL BE PROTECTED FROM SEDIMENT DURING AND AFTER INSTALLATION UNTIL THE DEVELOPMENT CONSTRUCTION IS COMPLETED.
8. MAINTENANCE OF EROSION PREVENTION AND SEDIMENT CONTROL BMPs.
9. ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs SHALL BE REGULARLY INSPECTED AND MAINTAINED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
10. THE CONTRACTOR SHALL MAINTAIN AND HAVE ON-SITE A WRITTEN LOG OF EROSION PREVENTION AND SEDIMENT CONTROL BMP MAINTENANCE.
11. ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED PER THE STORMWATER MANUAL.

DUST CONTROL:

IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST, REFER TO THE STORMWATER MANUAL FOR DUST CONTROL BMPs.

TEMPORARY SEEDING:

1. EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADE OR GIVEN A PERMANENT COVER TREATMENT WITHIN 30 DAYS OF THE EXPOSURE SHALL HAVE SEED MIX AND MULCH PLACED TO STABILIZE THE SOIL AND REDUCE EROSION SEDIMENTATION. SEEDING AREAS SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT EROSION WILL BE RESEED AS SOON AS SUCH AREAS ARE IDENTIFIED.
2. AN APPROVED TEMPORARY SEEDING MIXTURE SHALL BE APPLIED TO THE PREPARED SEED BED AT A RATE OF 120 LBS/ACRE. NOTE: HYDROSEEDING APPLICATIONS WITH APPROVED SEED-MULCH-FERTILIZER MIXTURES MAY ALSO BE USED.
3. PERMANENT STORM WATER FACILITIES SHALL BE ISOLATED AND PROTECTED FROM SEDIMENTATION WITH AN APPROVED BMP.

FINAL GEOTECHNICAL REPORT:

A FINAL SUMMARY REPORT BY THE GEOTECHNICAL ENGINEER OF RECORD SHALL BE PREPARED AND SUBMITTED TO THE CITY OF KALAMA THAT STATES THAT THE PROJECT SOILS WERE PREPARED IN ACCORDANCE WITH THE GOVERNING GEOTECHNICAL REPORT AND CONSTRUCTION DOCUMENTS.

* FOR ADDITIONAL INFORMATION ON SITE GRADING REFERENCE GEO-TECH REPORT DATED 4-05-2019 BY COLUMBIA WEST ENGINEERING, INC.

INDIVIDUAL LOTS MAY NEED ADDITIONAL GEOTECHNICAL DESIGN RECOMMENDATIONS FOR HOME & FOUNDATION DESIGN & CONSTRUCTION.

DIRT QUANTITIES (CY)

ITEM	STRUCTURAL		NONSTRUCTURAL		TOTAL STRUCTURAL & NON-STRUCTURAL GRADING VOLUME
	CUT	FILL	CUT	FILL	
SITE GRADING	54,700	100,000	34,200 ⁽¹⁾	6,800 ⁽³⁾	134,200
TRENCH SPOILS	5,500	---	---	---	
IMPORT	39,800	---	EXPORT	27,400 ⁽²⁾	
TOTAL	100,000	100,000	34,200	34,200	

NOTES:

- (1) ASSUMED SOIL STRIPPINGS OF 1.5". ACTUAL CONDITIONS MAY VARY PER GEOTECH RECOMMENDATIONS AND WILL EFFECT DIRT QUANTITIES.
 - (2) THIS VOLUME INCLUDES SOME MATERIAL THAT IS NOT SUITABLE TO BE PLACED IN LOT LANDSCAPED AREAS (I.E. DEMOLISHED GRAVEL, CONCRETE, ASPHALT...) AND WILL NEED TO BE HAUL OFF.
 - (3) ASSUMED 0.5" MAX OF STRIPPINGS PLACED BACK ON TO LOT AREAS
- QUANTITIES WERE CALCULATED ASSUMING ALL PHASES WOULD BE CONSTRUCTED SIMULTANEOUSLY. QUANTITIES DO NOT ACCOUNT FOR SHRINK AND SWELL FACTORS. ACTUAL MATERIAL QUANTITIES MAY VARY PER SOIL TYPE, SOIL CONDITIONS, & CONSTRUCTION PRACTICES. CONTRACTOR IS ENCOURAGED TO USE HIS OWN QUANTITY TAKEOFF.

LEGEND

- TEMPORARY STORM INLET PROTECTION (PER DETAIL C220)
- FILL AREA
- CUT AREA
- FLOW ARROW
- BUILDING PAD EL: XXX.XX
- APPROXIMATE BUILDING PAD ELEVATIONS
- TREE PROTECTION FENCING
- GRAVEL CONSTRUCTION ENTRANCE (PER DETAIL C105)
- TEMPORARY SEDIMENTATION TRAP
- TEMPORARY SILT FENCE (PER DETAIL C233)
- FC 100 FINISHED GRADE CONTOURS
- 100 EXISTING MAJOR CONTOURS
- STRAW WATTLES

ENGINEERING & DESIGN

CIVIL ENGINEERING ~ LAND PLANNING
DEVELOPMENT SERVICES
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WASHINGTON STATE PROFESSIONAL ENGINEER

11/6/2019

GRADING AND EROSION CONTROL PLAN 1

SUNSET TERRACE SUBDIVISION

WASHINGTON

CITY OF KALAMA

APPROVED

REVISIONS

DESIGNED BY: JTM
DRAWN BY: JPB
CHECKED BY: JTM
SCALE: 1" = 50'

JOB NUMBER: 1795
SHEET: C3.0

SCA ENGINEERING PLLC - DATE PLOTTED: Nov. 06, 2019 - 3:25 PM SCA DRAWING FILE: W:\DWG\1795 - SUNSET TERRACE\DRAWINGS\3-FINAL SHEET SET\GRADING AND EROSION CONTROL.DWG

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11/6/2019

WASHINGTON

**SUNSET TERRACE
 SUBDIVISION**

CITY OF KALAMA

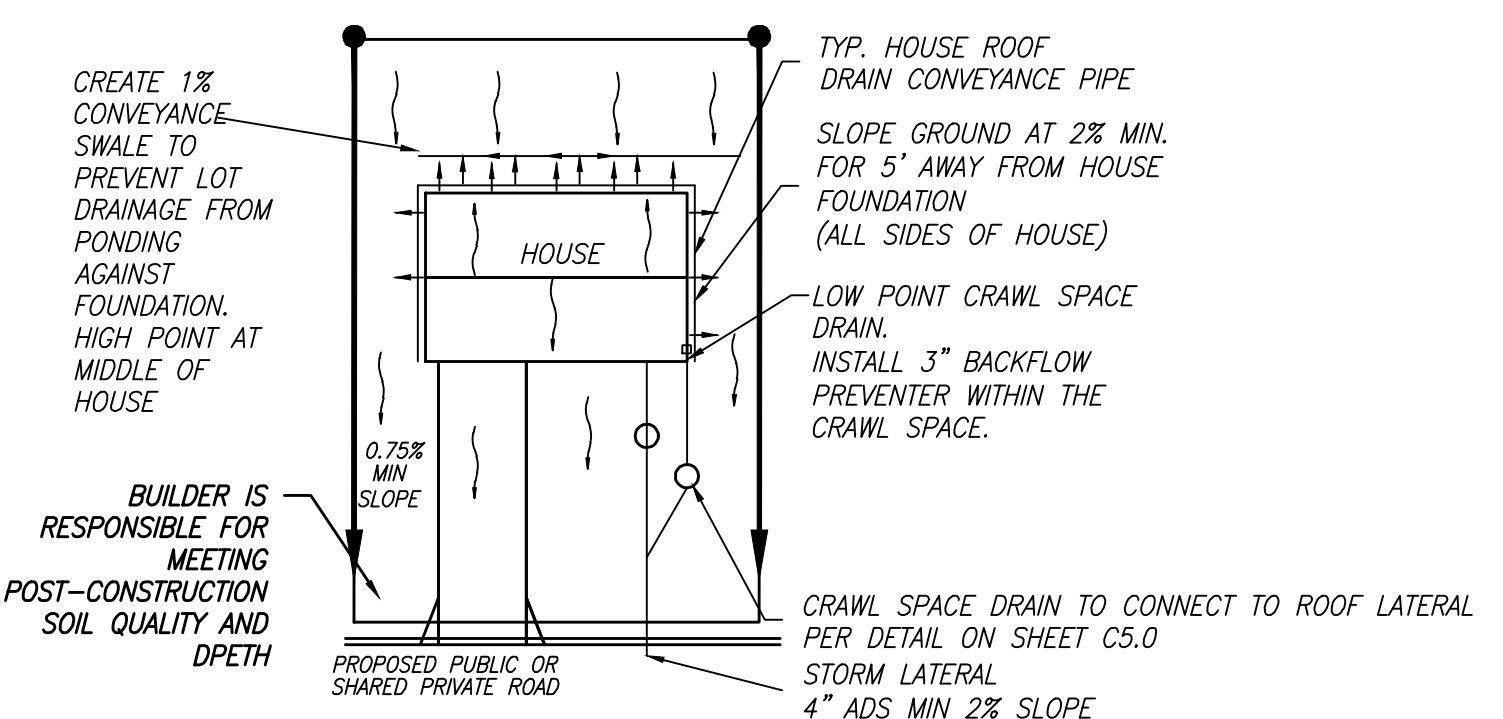
GRADING AND EROSION CONTROL PLAN 2

APPROVED

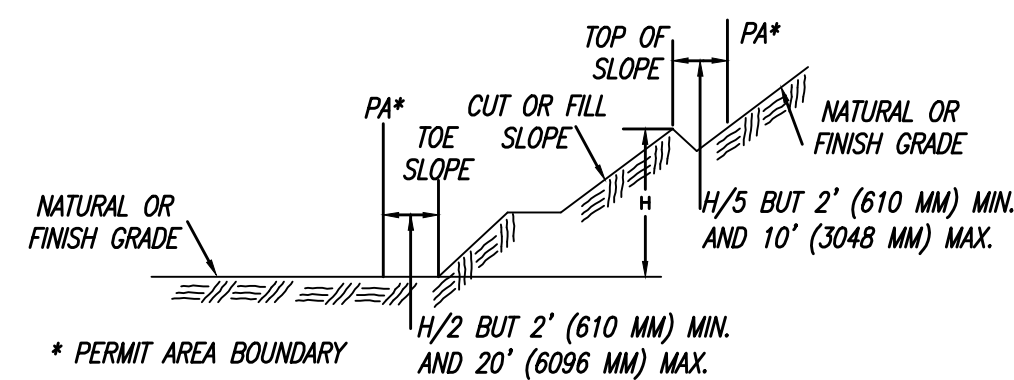
REVISIONS

DESIGNED BY: JTM
 DRAWN BY: JPB
 CHECKED BY: JTM
 SCALE: 1" = 50'

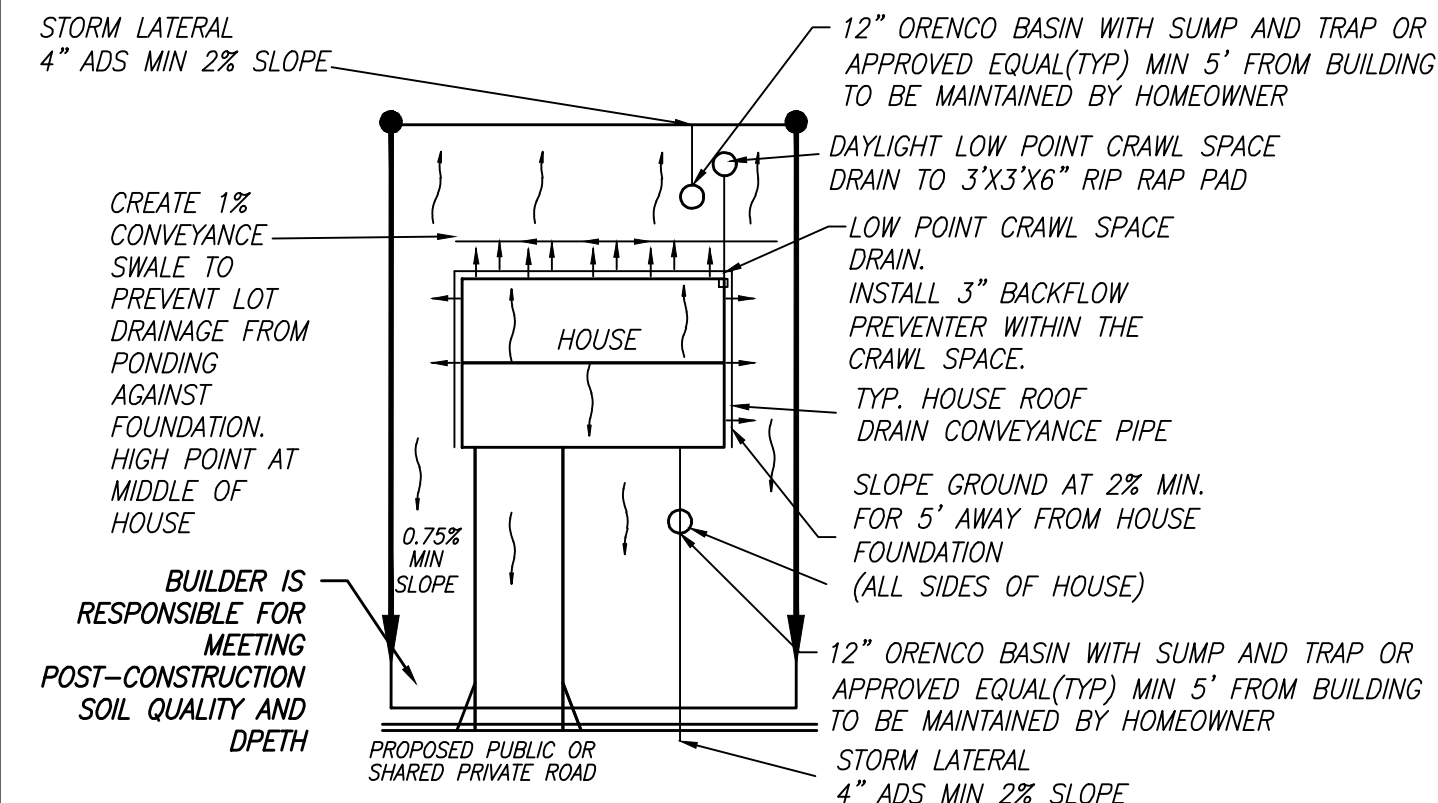
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 1795 C3.1



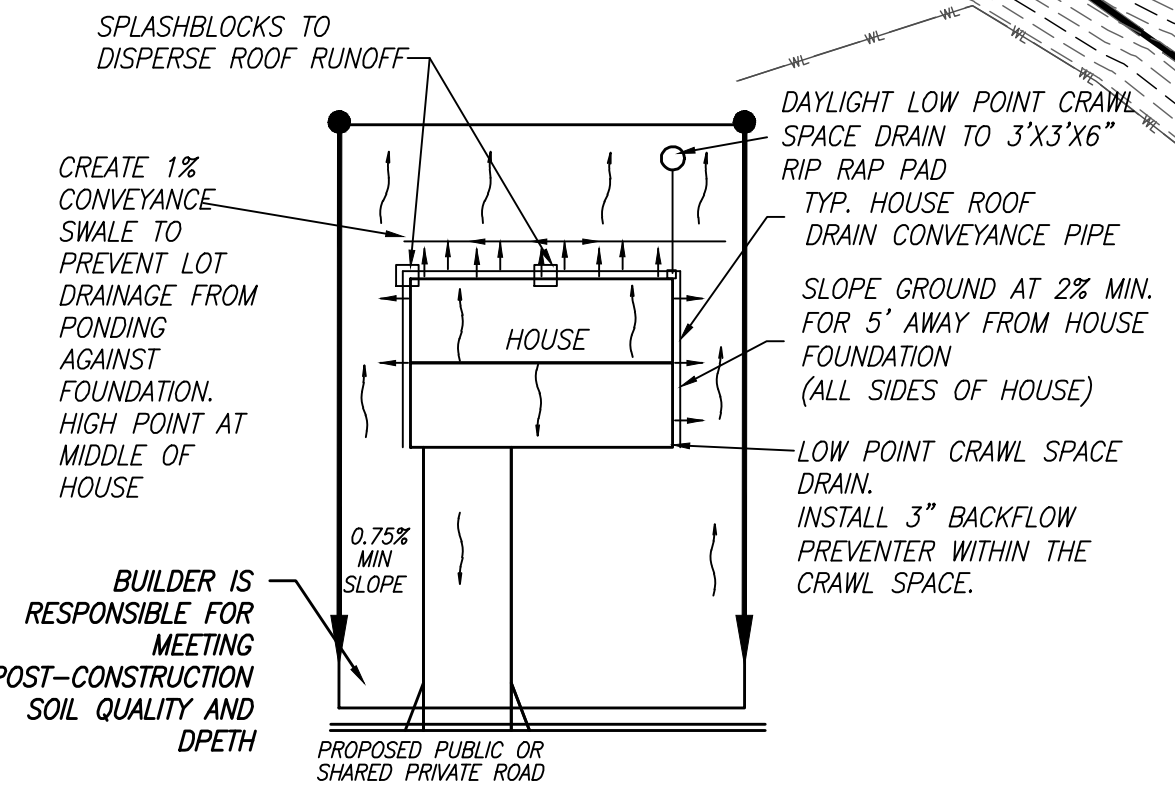
TYPICAL LOT GRADING AND DRAINAGE PLAN
 INCLUDES LOTS 1, 2, 13-16, 57-64



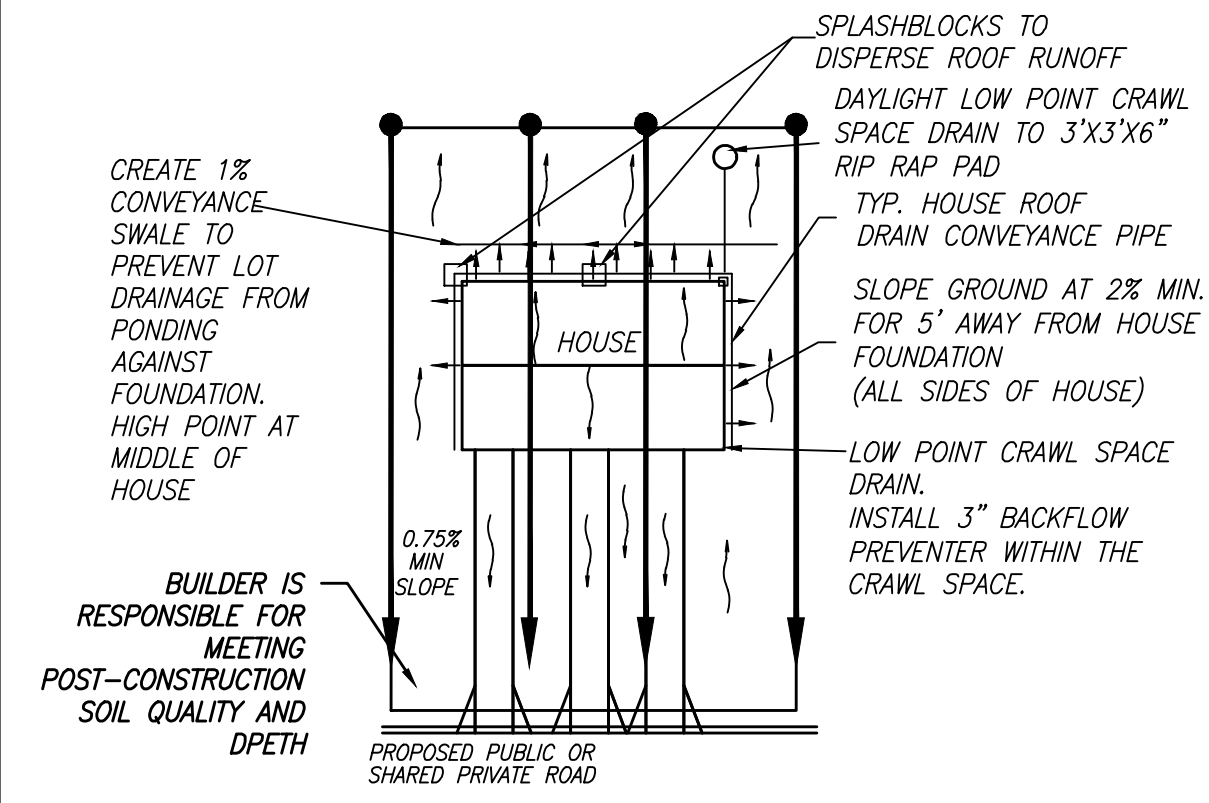
IBC APPENDIX J GRADING DETAIL
 NO SCALE



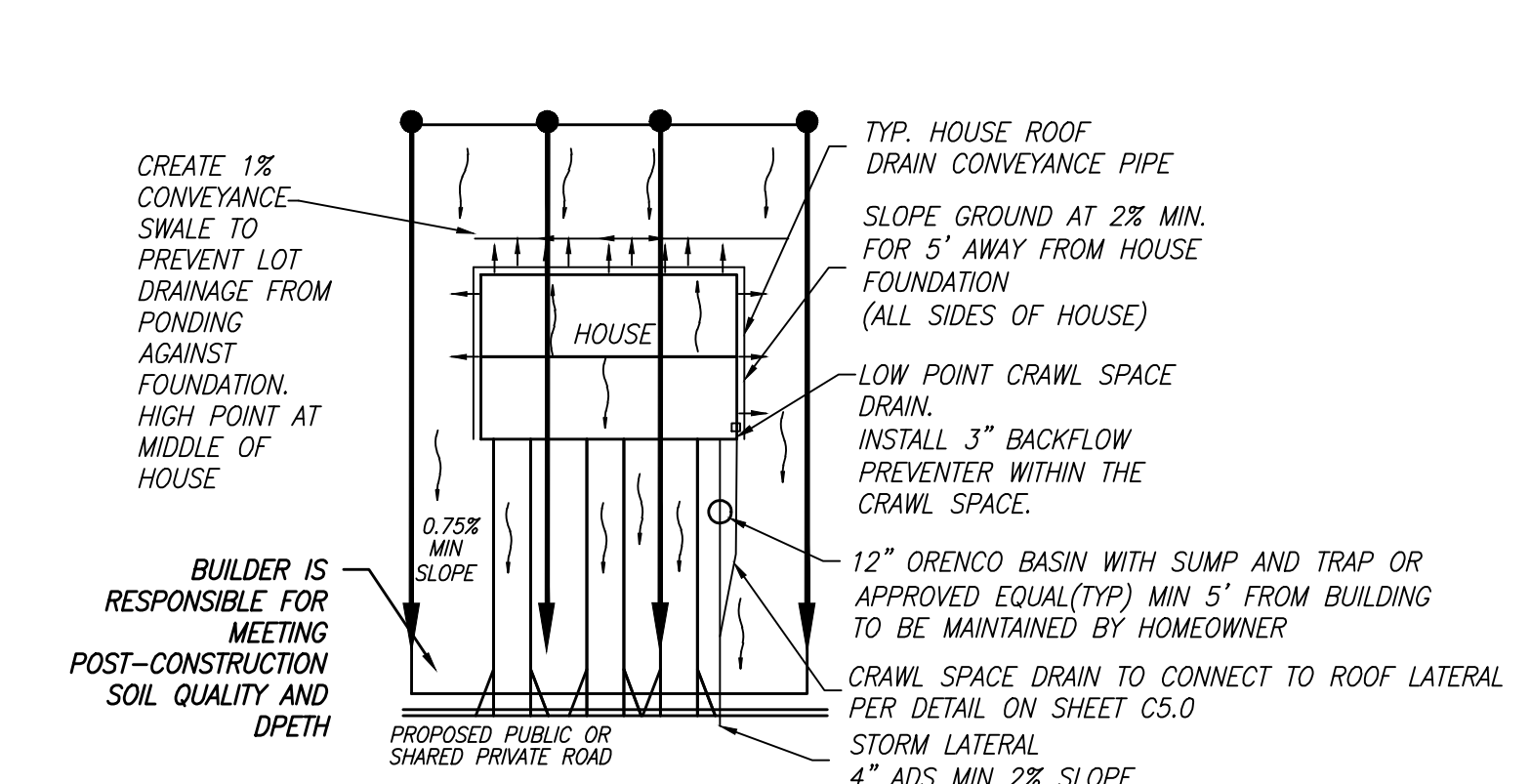
TYPICAL LOT GRADING AND DRAINAGE PLAN
 INCLUDES LOTS 3-12



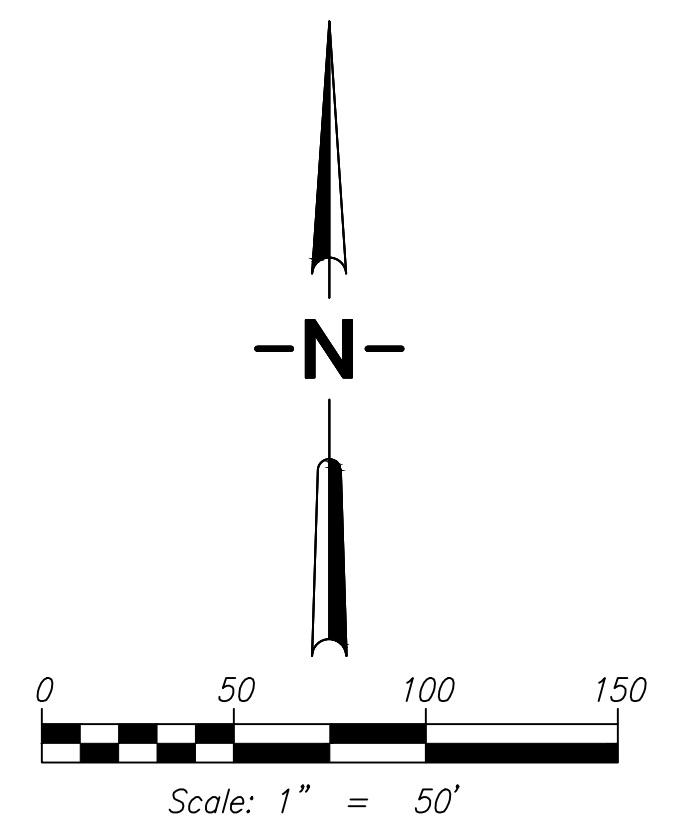
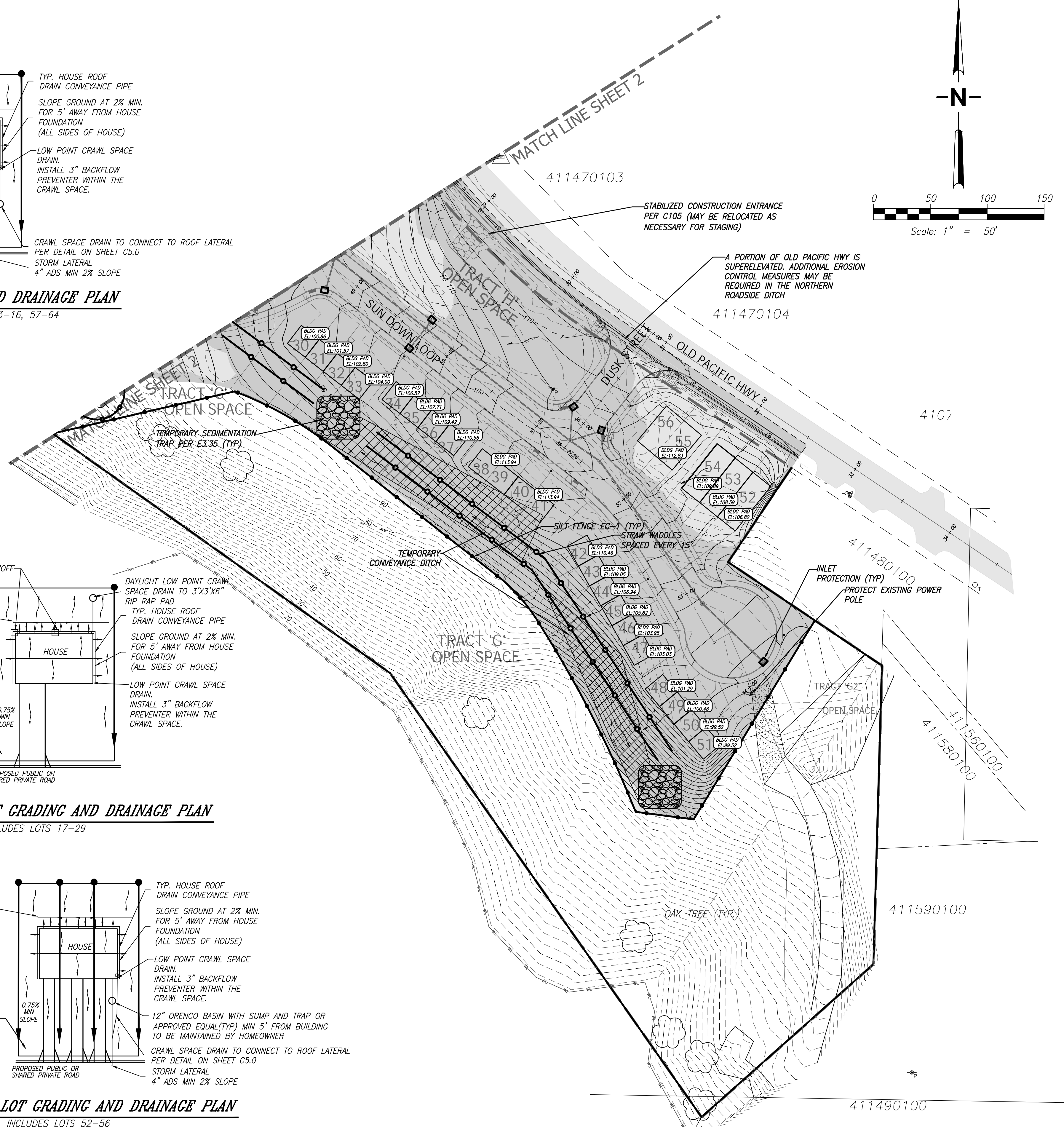
TYPICAL LOT GRADING AND DRAINAGE PLAN
 INCLUDES LOTS 17-29



TYPICAL LOT GRADING AND DRAINAGE PLAN
 INCLUDES LOTS 30-51



TYPICAL LOT GRADING AND DRAINAGE PLAN
 INCLUDES LOTS 52-56



MATCH LINE SHEET 2

MATCH LINE SHEET 1