

DRAWINGS FOR:

ARCHES LODGE - FIRE SUPPRESSION LINE

FOR:

AC + CO ARCHITECTURE COMMUNITY  
1100 LIBERTY STREET SE, SUITE 200,  
SALEM, OR 97302

DRAWING INDEX

DWG	TITLE
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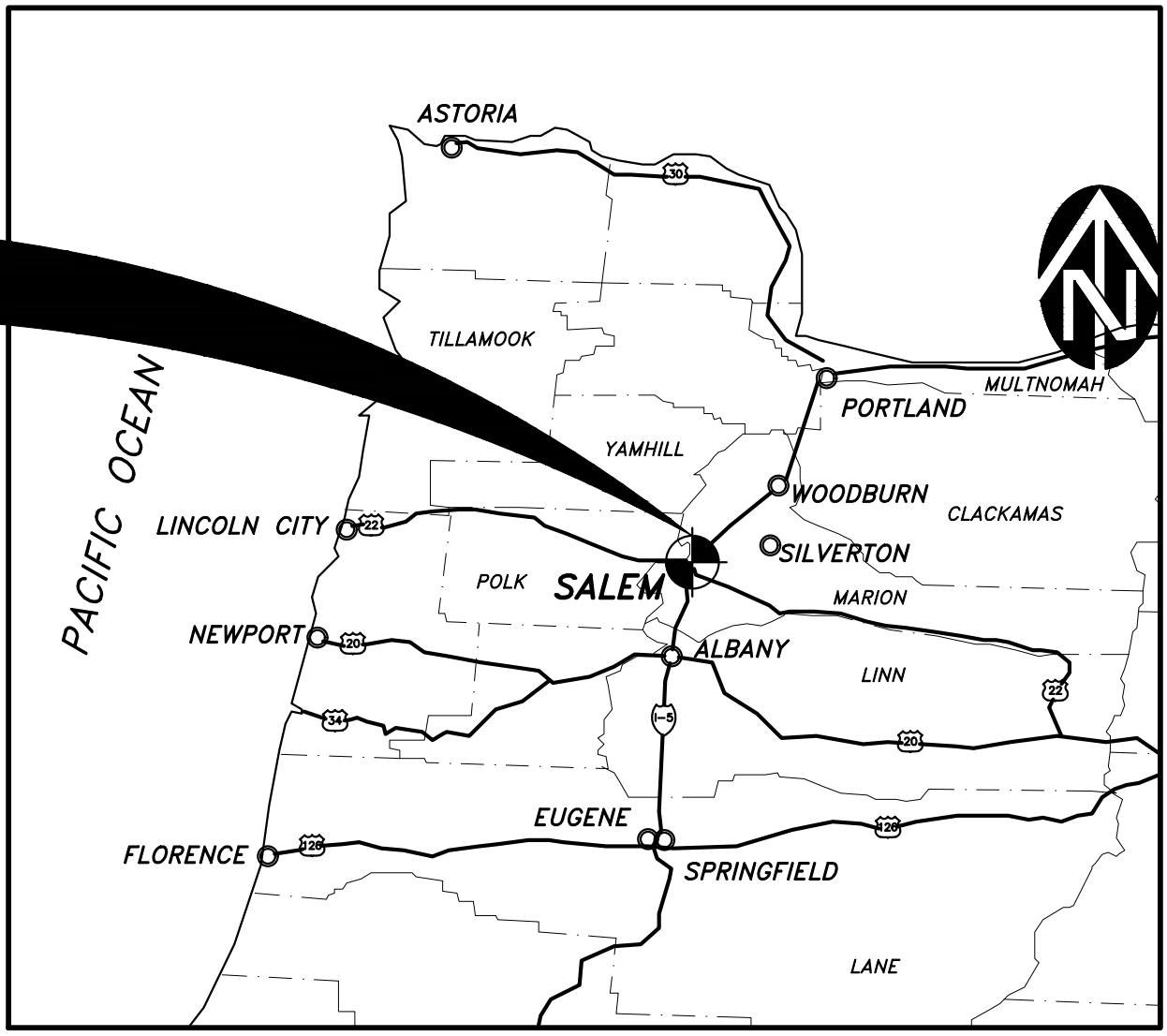
LEGEND	
●	FOUND MONUMENT
⊙	STORM DRAIN MANHOLE
⊠	STORM JUNCTION BOX
⊞	CATCH BASIN
⊞	CURB INLET
>	CULVERT
RD ⊙	ROOF DRAIN
⊙	SANITARY SEWER MANHOLE
CO ⊙	CLEANOUT
⊞	WATER METER
WV ⊞	WATER VALVE
FH ⊞	FIRE HYDRANT
⊞	IRRIGATION VALVE
⊞	POWER METER
⊞	ELECTRICAL TRANSFORMER
⊞	UTILITY POLE
GUY ⊞	GUY WIRE
⊞	COMMUNICATION RISER
⊞	COMMUNICATION BOX
⊞	GAS METER
⊞	GAS VALVE
⊞	SIGN
BOL ⊙	BOLLARD
⊞	HANDICAP PARKING
⊞	CONCRETE
⊞	GRAVEL
⊞	ASPHALT
⊞	DECIDUOUS TREE & TRUNK SIZE
⊞	CONIFEROUS TREE & TRUNK SIZE
---	SEWER LINE UNDERGROUND
---	STORM LINE UNDERGROUND
---	WATERLINE UNDERGROUND
---	GAS LINE UNDERGROUND
---	COMMUNICATION LINE UNDERGROUND
---	ELECTRICAL LINE UNDERGROUND
---	OVERHEAD POWER LINE
---	FENCE LINE
CONC	CONCRETE
DWY	DRIVEWAY
HCR	HANDICAP RAMP
FF	FINISH FLOOR
CHLK	CHAINLINK
SF	SQUARE FEET
C&G	CURB & GUTTER
BDO	BUILDING OVERHEAD
COL	COLUMN



Know what's below.  
Call before you dig.

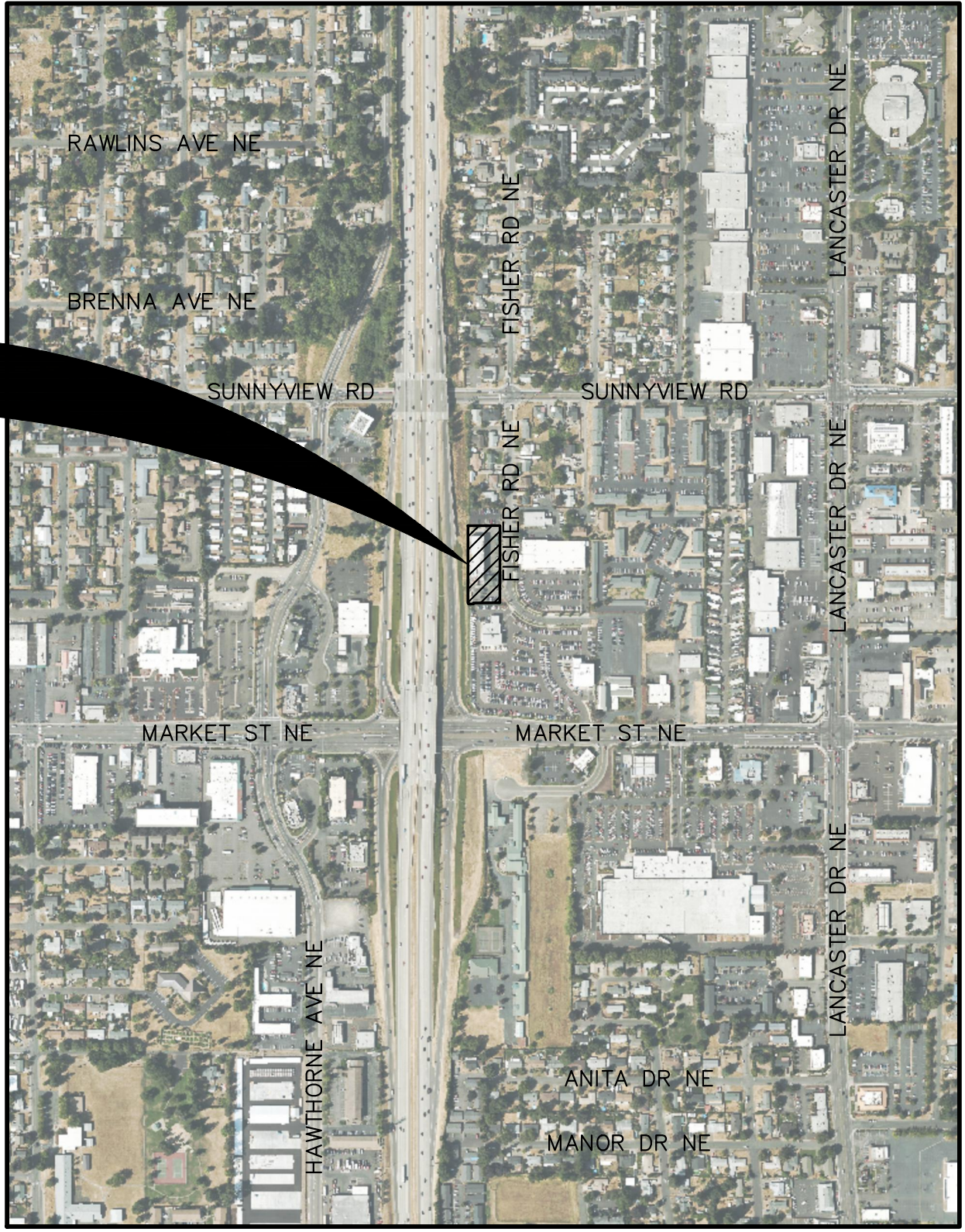
- NOTES
1. BASIS OF BEARINGS AND COORDINATE SYSTEM IS BASED ON OREGON STATE PLANE NORTH ZONE 3601, NAD83(2011), EPOCH 2010.00. ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES.
  2. ELEVATIONS WERE ESTABLISHED BY GPS RTK OBSERVATIONS TO CITY OF SALEM BENCHMARK "6030". MARK IS AN ALUMINUM DISK IN THE CURB AT THE SOUTHWEST CORNER OF LANCASTER DRIVE AND SUNNYVIEW ROAD NE. ELEVATION = 203.97' (CITY OF SALEM DATUM, NGVD29)
  3. THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED VISIBLE EVIDENCE OF ABOVE GROUND APPURTENANCES ALONG WITH SURFACE UTILITY MARKINGS BY OTHERS. ALL UNDERGROUND UTILITIES SHOWN WERE MARKED ON THE SURFACE BY AN "OREGON ONE-CALL NOTIFICATION CENTER" REQUEST AS WELL AS "MARK IT OUT, LLC", A PRIVATE LOCATING SERVICE PROVIDER. SURVEYOR MAKES NO GUARANTEE AS TO THE ACCURACY OF SAID MARKINGS. HOWEVER, THEY ARE LOCATED AS ACCURATELY AS THEY ARE MARKED ON THE GROUND.
  4. PER ORS 209.150, ANY SURVEY MONUMENT REMOVED, DISTURBED OR DESTROYED SHALL BE REPLACED BY A PROFESSIONAL LAND SURVEYOR WITHIN 90 DAYS AT THE EXPENSE OF THE PERSON OR PUBLIC AGENCY RESPONSIBLE FOR SAID REMOVAL, DISTURBANCE OR DESTRUCTION.
  5. FIELD SURVEYED SEPTEMBER, 2023.

PROJECT  
LOCATION



VICINITY MAP

PROJECT  
LOCATION



LOCATION MAP

WESTECH ENGINEERING, INC.  
CONSULTING ENGINEERS AND PLANNERS

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REGISTERED PROFESSIONAL ENGINEER  
76415PE  
DIGITALLY SIGNED  
OREGON  
NOV 12 2026  
WILLIAM J. WELLS  
RENEWS: 6/30/2026

In the event conflicts are discovered between the original signed and sealed documents prepared by the Architect and/or their Consultants, and any copy of the documents transmitted by mail, fax, electronically or otherwise the original signed and sealed documents shall govern.

WE JOB NO. 3475.0000.0  
JOB NO. 2023.0039

DATE JUNE 7, 2024

DRAWN IH

REVISIONS

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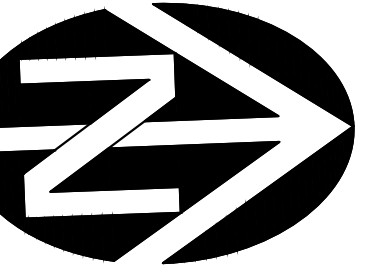
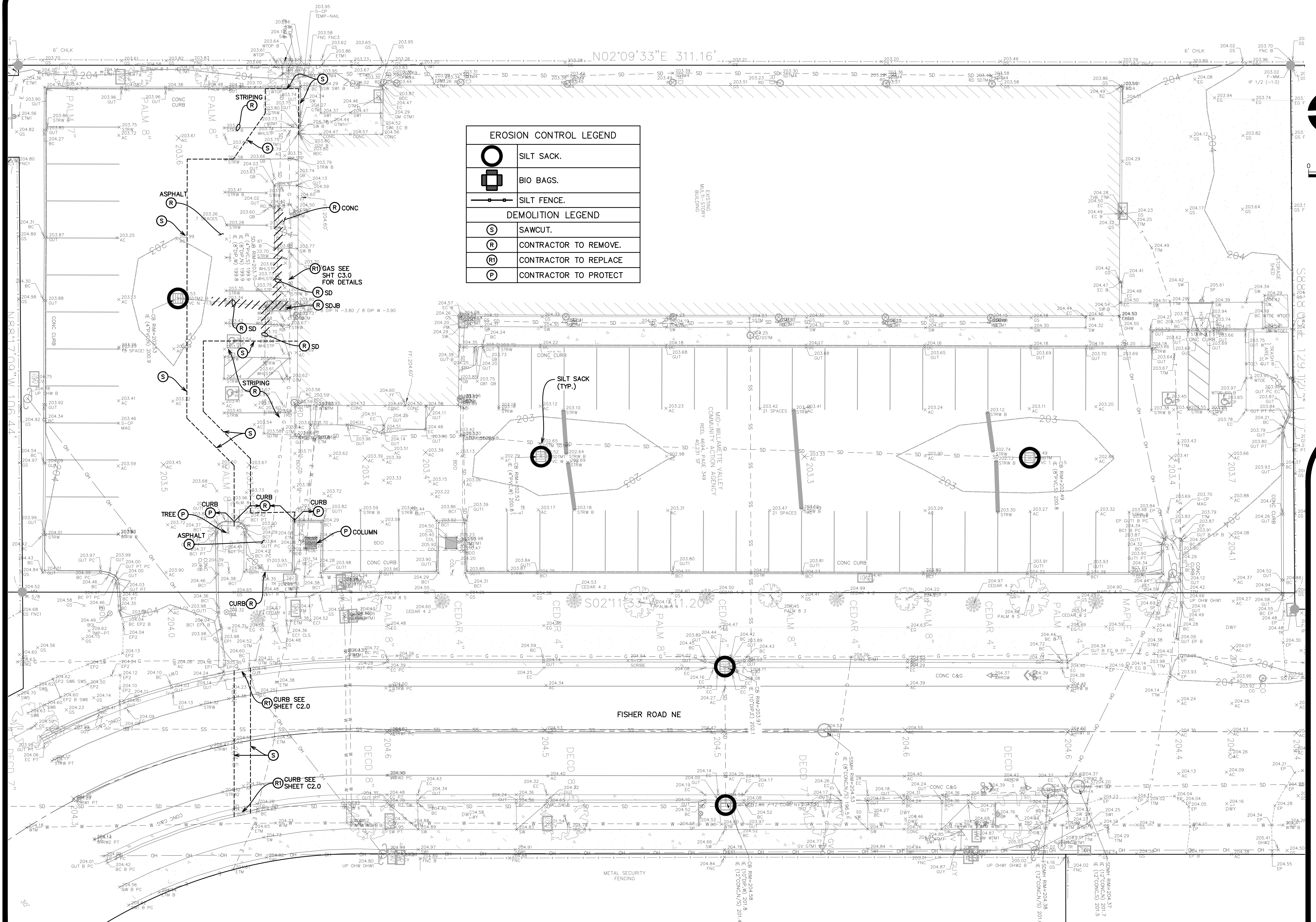
ARCHES LODGE  
COVER SHEET, VICINITY  
AND LOCATION MAPS,  
DRAWING INDEX

1875 FISCHER RD NE  
SALEM, OREGON 97305

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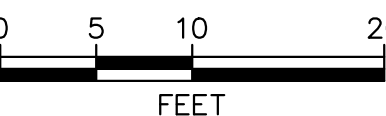
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ARCHES LODGE  
EXISTING CONDITIONS,  
EROSION CONTROL, AND  
DEMOLITION PLAN

1875 FISCHER RD NE  
SALEM, OREGON 97305

SHEET  
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## REVISIONS



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## ARCHES LODGE

POST-DEVELOPED EROSION  
CONTROL PLAN

1875 FISCHER RD NE  
SALEM, OREGON 97305

SHEET

## C1.1

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- Rev. 12/15/15 By: Krista Ratliff

CONTROL MEASURE	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Silt Fencing	X	X	X	X	
Construction Entrance	X	X			
Sediment Traps			X	X	
Storm Inlet Protection	X	X	X	X	
Concrete Washout					
Rock Outlet Protection			X	X	X
Permanent Seeding and Planting					X
Phase 1: Prior to Ground Disturbance Phase 2: After Completion of Rough Grading Phase 3: After Installation of Storm Facilities Phase 4: After Paving & Construction Phase 5: After Project Completion and Cleanup					

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snowmelt, is occurring.  At least once every 14 days, regardless of whether stormwater runoff is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility.	Once to ensure that erosion and sediment control measures are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than seven (14) consecutive calendar days	Once every month.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.
5. Periods during which discharge is unlikely due to frozen conditions	Monthly. Resume monitoring immediately upon melt, or when weather conditions make discharge likely.

A preliminary list of available Best Management Practices (BMP) options based on DEC's 1200-C Permit Application and ESCP Guidance Document has been reviewed to complete this Erosion and Sediment Control Plan. Some of the above listed BMPs were not chosen because they were determined to not effectively manage erosion prevention and sediment control for this project based on specific site conditions, including soil conditions, topographic constraints, accessibility to the site, and other related conditions. As the project progresses and there is a need to revise the ESCP, an Action Plan will be submitted.

1. Erosion control measures shall be maintained in such a manner as to ensure that sediment and sediment-laden water does not enter the drainage system, roadways, or violate applicable water quality standards.
2. The erosion control construction, maintenance, replacement and upgrading of the erosion control facilities is the responsibility of the Contractor until all construction is completed and approved, and permanent erosion control (i.e. vegetation/landscaping) is established on all disturbed areas.
3. All recommended erosion control procedures are dependent on construction methods, staging, site conditions, weather and scheduling. During the construction period, erosion control facilities shall be upgraded as necessary due to unexpected storm events and to ensure that sediment and sediment laden water does not leave the site.
4. The Contractor is responsible for control of sediment transport within project limits. If an installed erosion control system does not adequately contain sediment on site, then the erosion control measures shall be adjusted or supplemented by the Contractor as necessary to ensure that sediment laden water does not leave the site. Additional measures shall be provided as required to ensure that all paved areas are kept clean for the duration of the project. Additional interim measures will include, at a minimum, installation of silt fences in accordance with the details shown on the drawings. These measures shall be installed along all exposed embankments and cut slopes to prevent sediment transport.
5. All existing and newly constructed storm inlets and drains shall be protected until pavement surfaces are completed and/or vegetation is established.
6. Erosion control facilities and sediment fences on active sites shall be inspected by the Contractor at least daily during any period with measured precipitation. Any required repairs or maintenance shall be completed immediately. The erosion control facilities on inactive sites shall be inspected and maintained by the Contractor a minimum of once a month or within 24 hours following the start of a storm event.
7. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system. The Contractor shall remove all accumulated sediment from all impacted catch basins and storm pipes prior to acceptance by the Owner.
8. The Contractor is solely responsible for protection of all adjacent property and downstream facilities from erosion and siltation during project construction. Any damage resulting from such erosion and siltation shall be corrected at the sole expense of the Contractor.
9. The Contractor shall provide site watering as necessary to prevent wind erosion of fine-grained soils.
10. Unless otherwise indicated on the drawings, all temporary erosion control facilities, including sediment fences, silt sacks, bio-bags, etc. shall be removed by the Contractor within 30 days after permanent landscaping/vegetation is established.
11. Sediment fences shall be constructed of continuous filter fabric 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 both ends securely fastened to a post.
12. Sediment fence shall be installed per drawing details. Sediment fences shall have adequate support to contain all silt and sediment captured.
13. The standard strength filter fabric shall be fastened securely to stitched loops installed on the upslope side of the posts, and 6 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 30 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
14. Bio-filter bags shall be clean 100 percent wood product waste. Bags shall be 18-inch x 18-inch x 30-inch, weigh approximately 45 lbs., and be contained in a bag made of 1/2-inch plastic mesh.
15. Sediment barriers shall be maintained until the up-slope area has been permanently stabilized. At no time shall more than 10-inches of sediment be allowed to accumulate behind sediment fences. No more than 2 inches of sediment shall be allowed to accumulate behind bio-filter bags. Sediment shall be removed prior to reaching the above stated depths. New sediment barriers shall be installed uphill as required to control sediment transport.
16. 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.
17. The Contractor shall verify that all trucks are well sealed when transporting saturated soils from the site. Water dripage from trucks transporting saturated soils must be reduced to less than 1 gallon per hour prior to leaving the site.
18. The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto the public right-of-way or approved access point. The entrance may require periodic top dressing as conditions demand, and repair and/or cleanout of any structures used to trap sediment.
19. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately, and the Contractor shall provide protection of downstream inlets and catch basins to ensure sediment laden water does not enter the storm drain system.
20. Temporary grass cover measures must be fully established by October 15th, or other cover measures (i.e. erosion control blankets with anchors, 3-inches minimum of straw mulch, 6 mil HDPE plastic sheet, etc.) shall be in place over all disturbed soil areas until April 30th. To establish an adequate grass stand for controlling erosion by October 15th, it is recommended that seeding and mulching occur by September 1st. Straw mulch, if used, shall not leave any bare ground visible through the straw.
21. Minimum wet weather slope protection. For slopes steeper than 3H:1V but less than 2H:1V, use Tensar/North American Green Type S150 erosion control blanket. For slopes 2H:1V or steeper, use Tensar/North American Green Type S150 erosion control blanket. To establish an adequate grass stand for controlling erosion by October 15th, it is recommended that seeding and mulching occur by September 1st. Straw mulch, if used, shall not leave any bare ground visible through the straw.
22. Permanent erosion control vegetation on all embankments and disturbed areas shall be re-established as soon as construction is completed.
23. Soil preparation. Topsoil should be prepared according to landscape plans, if available, or recommendations of a grass seed supplier. It is recommended that slopes be textured before seeding by rack walking (i.e. driving a grading tractor up and down the slopes to leave a pattern of cleat imprints parallel to slope contours) or other method to provide stable areas for seeds to rest.
24. When used, hydromulch shall be applied with grass seed at a rate of 2000 lbs. per acre between April 30 and June 10, or between September 1 and October 1. On slopes steeper than 10 percent, hydrosseed and mulch shall be applied with a bonding agent (tackifier). Application rate and methodology to be in accordance with seed supplier recommendations.
25. When used in lieu of hydromulch, dry, loose, weed free straw used as mulch shall be applied at a rate of 4000 lbs. per acre (double the hydromulch application requirement). Anchor straw by working in by hand or with equipment (rollers, cleat trackers, etc.). Mulch shall be spread uniformly immediately following seeding.
26. When conditions are not favorable to germination and establishment of the grass seed, the Contractor shall irrigate the seeded and mulched areas as required to establish the grass cover.
27. Seeding. Recommended erosion control grass seed mix is as follows. Dwarf grass mix (low height, low maintenance) consisting of dwarf perennial ryegrass (80 % by weight), creeping red fescue (20 % by weight). Application rate shall be 100 lbs. per acre minimum.
28. Grass seed shall be fertilized at a rate of 10 lbs. per 1000 S.F with 16-16-16 slow release type fertilizer. Development areas within 50 feet of water bodies and wetlands must use a non-phosphorous fertilizer.
29. Prior to starting construction contractor shall acquire the services of a DEQ Certified Erosion and Sediment Control Inspector and shall submit an "Action Plan" to DEQ identifying their names, contact information, training and experience as required in Schedule A.6.b.i-ii of the 1200-C Permit
30. Contractor shall submit "Notice of Termination" to DEQ to end the 1200-C permit coverage once all soil disturbance activities have been completed and final stabilization of exposed soils has occurred.

REGISTERED PROFESSIONAL  
ENGINEER  
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RENEW: 6/30/2026

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JUNE 7, 2024

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VISIONS

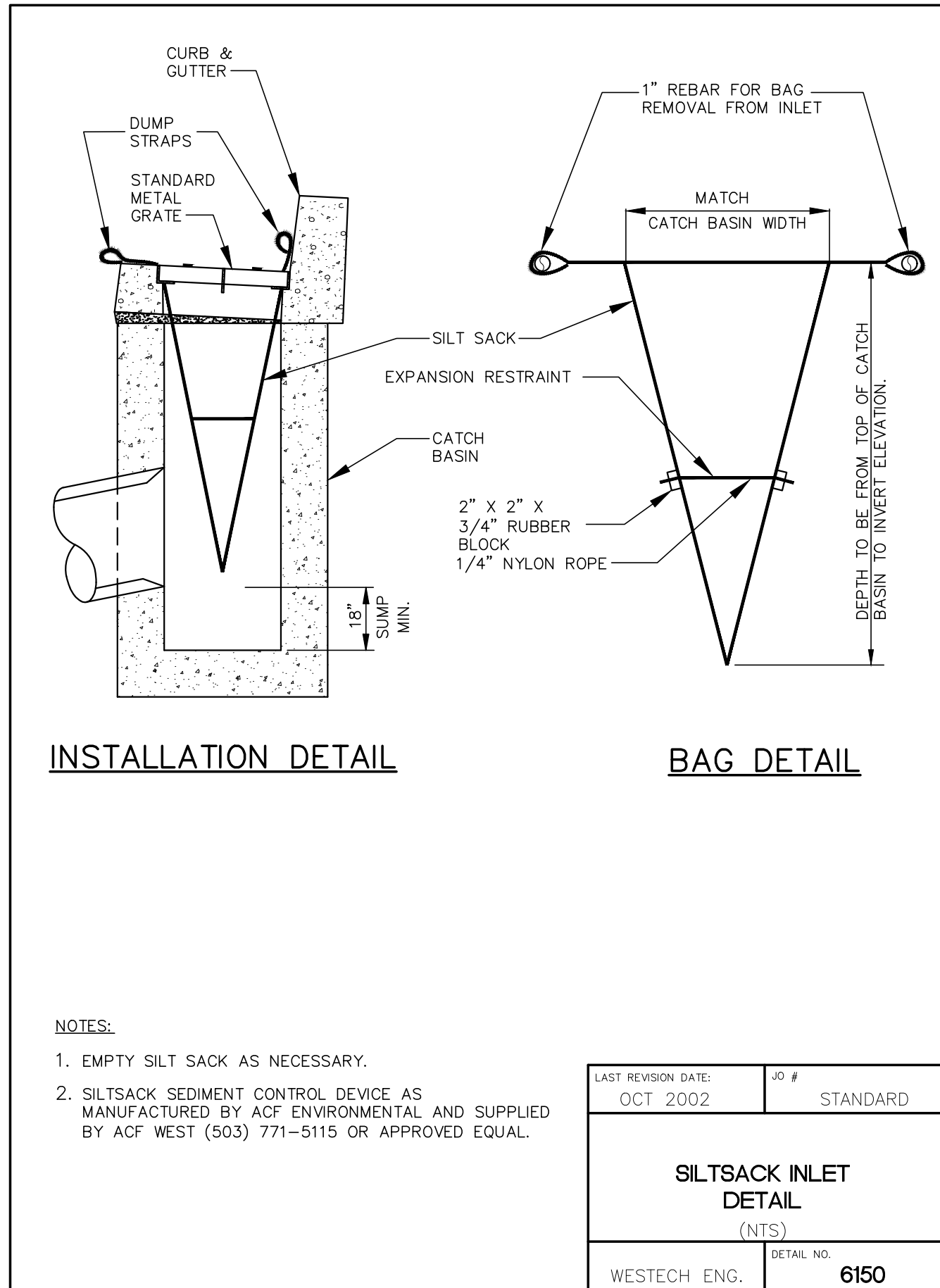
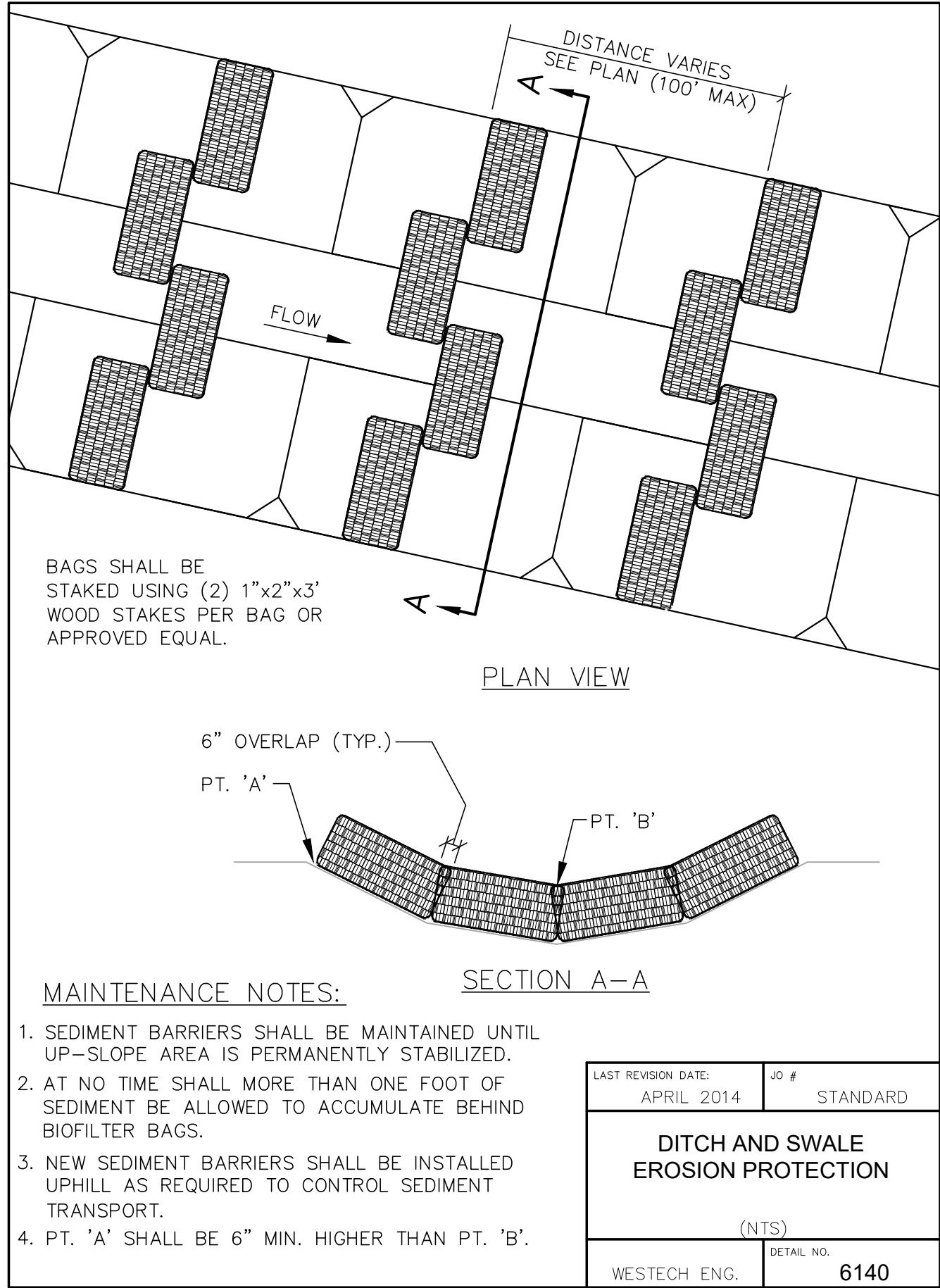
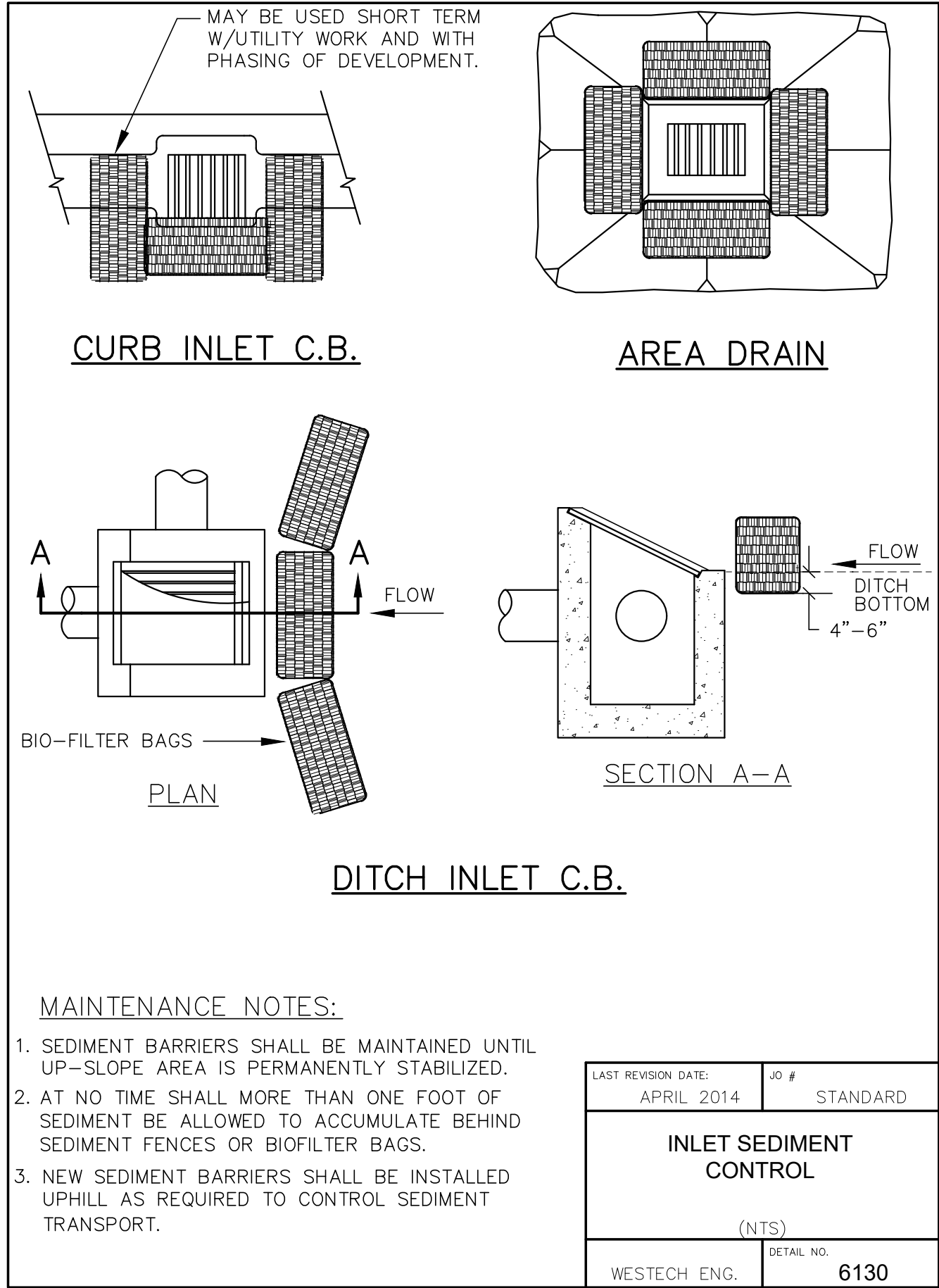
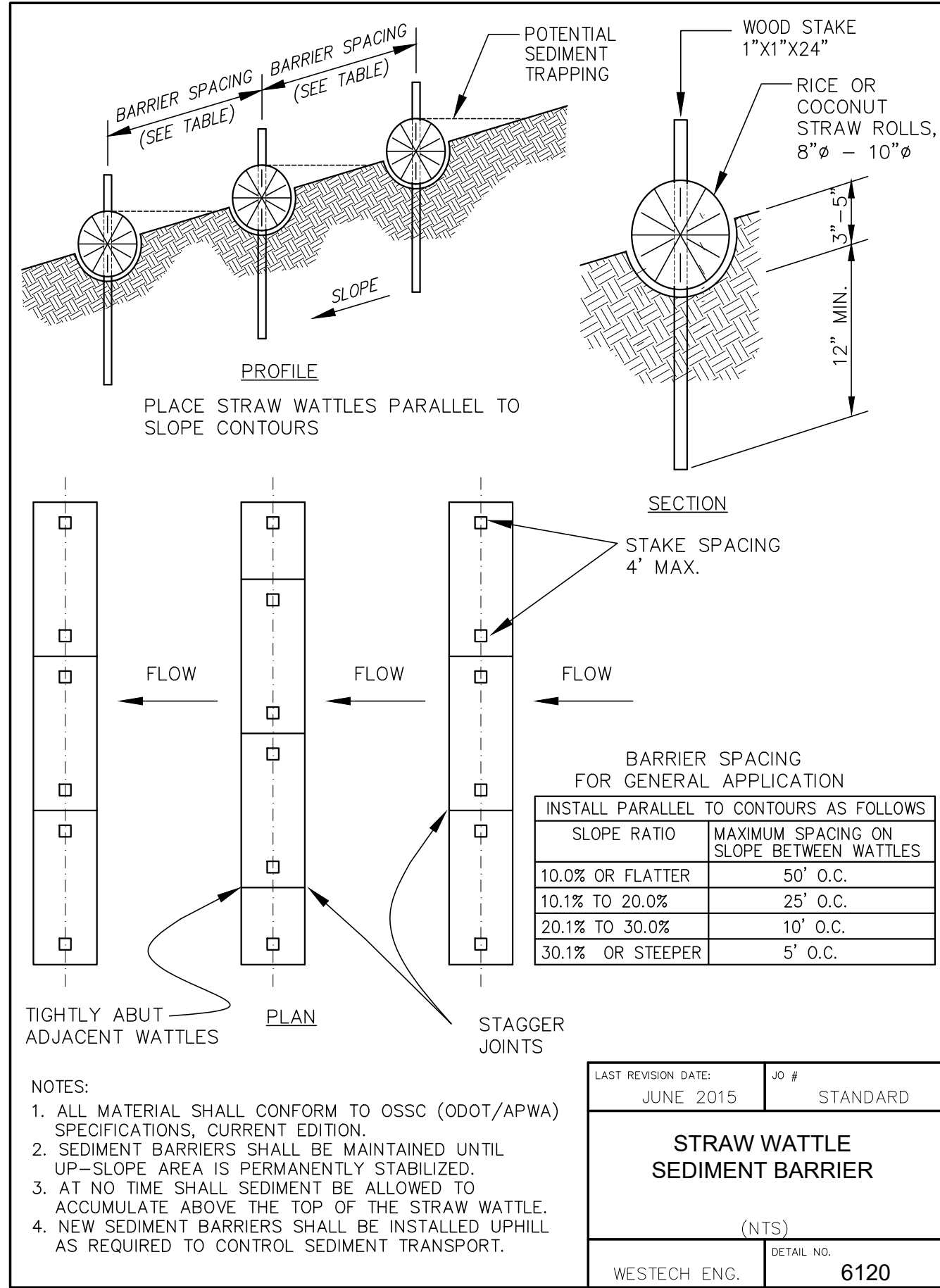
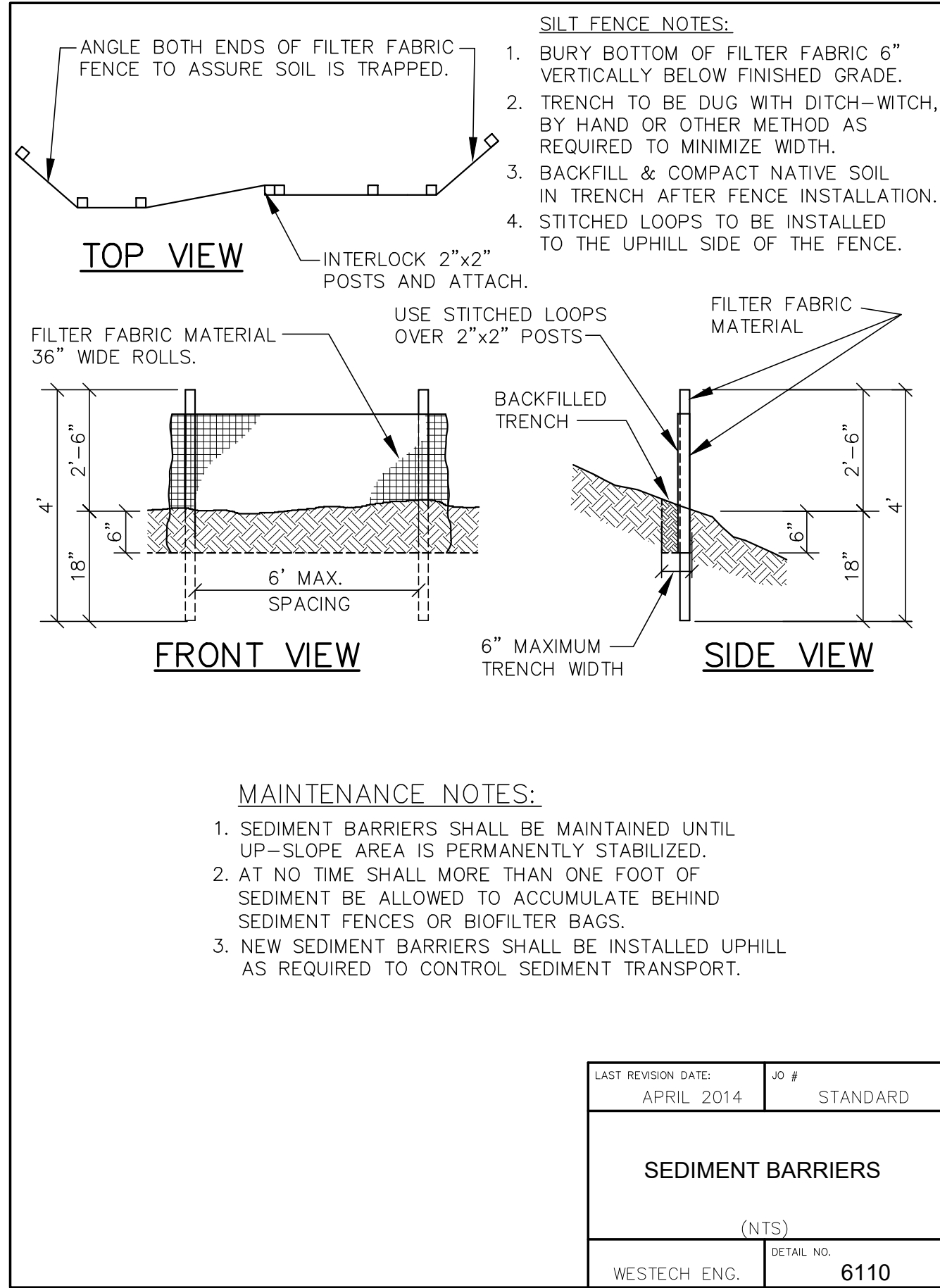
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EMISSION CONTROL NOTE

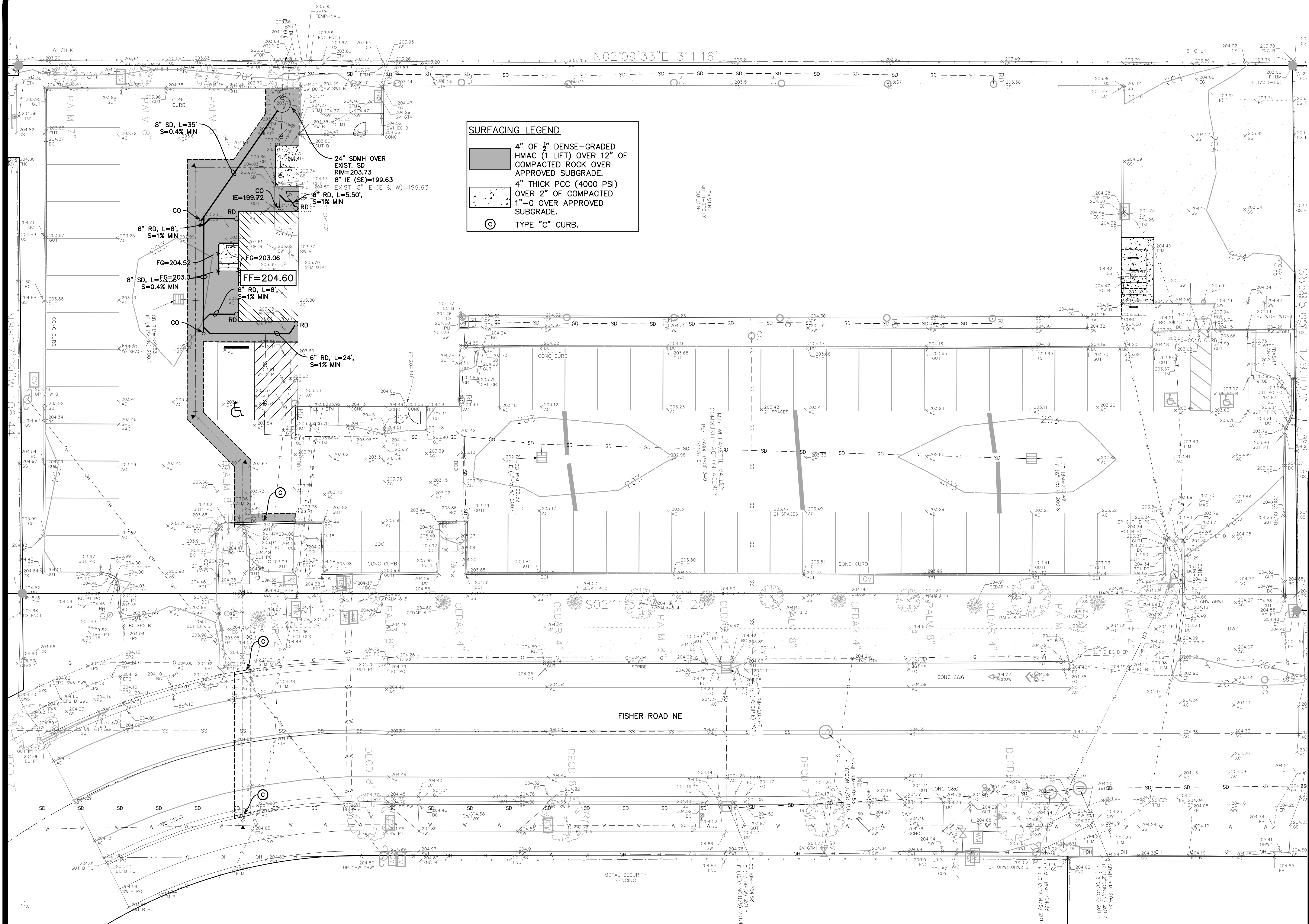
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WESTECH ENGINEERING, INC.  
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REVISIONS

**ac**

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ARCHES LODGE  
GRADING, DRAINAGE, AND  
SURFACING PLAN

1875 FISCHER RD NE  
SALEM, OREGON 97305

SHEET

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GENERAL NOTES

1. Contractor shall procure, and conform to all construction permits required by the City of Salem.
2. Owner to pay all project permit costs, including but not limited to utility tapping, TV, and chlorination costs. The Contractor shall coordinate with the Approving Agency to determine appropriate fees and provide the Owner with 48 hours notice prior to the required payment of fees or costs.
3. Oregon law requires the Contractor to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. Obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 503-232-1987).
4. Contractor to notify City and all utility companies a minimum of 48 business hours (2 business days) prior to start of construction, and comply with all other notification requirements of the Approving Agency with Jurisdiction over the work.
5. Contractor shall provide all bonds and insurance required by public and/or private agencies having Jurisdiction. Where required by public and/or private agencies having Jurisdiction, the Contractor shall submit a suitable maintenance bond prior to final payment.
6. For City Construction Permits, contact Salem Public Works Engineering Construction Management at 503-588-6211. For City Building Permits, contact Salem Permit Application Center at 503-588-6256.
7. Contractor to apply for services at the Permit Application Center (PAC office) for work to be done by City forces on public mains.
8. All materials and workmanship for facilities in street right-of-way or easements shall conform to Approving Agencies' construction specifications wherein each has jurisdiction, including but not limited to the City, County, Oregon Division (OHD) and the Oregon Department of Environmental Quality (DEQ).
9. Unless otherwise approved by the Public Works Director, construction of all public facilities shall be done between 7:00 a.m. and 6:00 p.m., Monday through Saturday.
10. The Contractor shall perform all work necessary to complete the project in accordance with the approved construction drawings including such incidentals as may be necessary to meet the Approving Agencies' requirements and provide a completed project.
11. Any inspection by the City or other Approving Agency shall not, in any way, relieve the Contractor from any obligation to perform the work in strict compliance with the contract documents, applicable codes, and Approving Agency requirements.
12. Contractor shall maintain one complete set of approved drawings on the construction site at all times wherein he will record all approved deviations in construction from the approved drawings, as well as the station locations and depths of all existing utilities encountered. These field record drawings shall be kept up to date at all times and shall be available for inspection by the Approving Agency or Owner's Representative upon request. Failure to conform to this requirement may result in delay in payment and/or final acceptance of the project.
13. Upon completion of construction of all new facilities, Contractor shall submit a clean set of field record drawings containing all as-built information to the Engineer. All information shown on the Contractor's field record drawings shall be subject to verification. If significant errors or deviations are noted, an as-built survey prepared and stamped by a registered professional Land Surveyor shall be completed at the Contractor's expense.
14. Surveying for design was completed by Barker Surveying at (503)588-8800.

15. The contractor shall retain and pay for the services of a registered Civil Engineer and/or Land Surveyor licensed in the State of Oregon to establish construction control and perform initial construction surveys to establish the lines and grades of improvements as indicated on the drawings. Staking for buildings, structures, curbs, gravity drainage pipes/structures and other critical improvements shall be completed using equipment accurate to 0.04 feet horizontally and 0.02 feet vertically, or better. Use of GPS equipment for final construction staking of these critical improvements is prohibited. The registered professional surveyor shall provide the design engineer with copies of all grade sheets for construction staking performed for the project.
16. See architectural drawings for site lighting, site dimensioning, and continuation of all utilities.

TRAFFIC CONTROL

17. Contractor shall erect and maintain barricades, warning signs, traffic cones (and all other traffic control devices required) per City requirements in accordance with the current MUTCD (including Oregon amendments). Access to driveways shall be maintained at all times. All traffic control measures shall be approved and in place prior to any construction activity. Prior to any work in the existing public right-of-way, Contractor shall submit final traffic control plan to the Approving Agency for review and issuance of a Lane Closure or Work in Right-of-Way Permit.
18. Prior to any work in the existing right-of-way, Contractor shall submit final traffic control plan to City of Salem for review and issuance of lane closure permit. Contractor to obtain a lane closure permit before construction starts for any work within the existing public right-of-way, including public street improvements or driveway connections to existing streets.

TESTING AND INSPECTION:

19. For public and private improvements, the Contractor shall be responsible to ensure that all required or necessary inspections are completed by authorized inspectors prior to proceeding with subsequent work which covers or that is dependent on the work to be inspected. Failure to obtain necessary inspection(s) and approval(s) shall result in the Contractor being fully responsible for all problems and/or corrective measures arising from uninspected work.
20. Unless otherwise specified, the attached "Required Testing and Frequency" table outlines the minimum testing schedule for private improvements on the project. This testing schedule is not complete, and does not relieve the Contractor of the responsibility of obtaining all necessary inspections or observations for all work performed, regardless of who is responsible for payment. Cost for retesting shall be borne by the Contractor.

EXISTING UTILITIES & FACILITIES:

21. The location and descriptions of existing utilities shown on the drawings are compiled from available records and/or field surveys. The Engineer or utility companies do not guarantee the accuracy or the completeness of such records. Contractor shall field verify locations and sizes of all existing utilities prior to construction.
22. Utility locations are based on record information and should be field-verified. Call 1-800-332-2344 at least 48 hours prior to construction for on-site locating of utilities.
23. Contractor shall field verify location and depth of all existing utilities where new facilities cross. All utility crossings marked or shown on the drawings shall be potholed using hand tools or other non-invasive methods prior to excavating or boring. Contractor shall be responsible for exposing potential utility conflicts far enough ahead of construction to make necessary grade or alignment modifications without delaying the work. If grade or alignment modification is necessary, Contractor shall notify the Design Engineer, and the Design Engineer or the Owner's Representative shall obtain approval from the Approving Agency prior to construction.
24. The Contractor shall be responsible for locating and marking all existing survey monuments of record (including but not limited to property and street monuments) prior to construction. If any survey monuments are removed, disturbed or destroyed during construction of the project, the Contractor shall retain and pay for the services of a Registered Professional Surveyor licensed in the State of Oregon to reference and replace all such monuments prior to final payment. The monuments shall be replaced within a maximum of 90 days, and the County Surveyor shall be notified in writing as required by per ORS 209.150.
25. All facilities shall be maintained in-place by the Contractor unless otherwise shown or directed. Contractor shall take all precautions necessary to support, maintain, or otherwise protect existing utilities and other facilities at all times during construction. Contractor to leave existing facilities in an equal or better-than-original condition and to the satisfaction of the Approving Agency and Owner's Representative.
26. Utilities or interfering portions of utilities that are abandoned in place shall be removed by the Contractor to the extent necessary to accomplish the work. The Contractor shall plug the remaining exposed ends of abandoned utilities after appropriate verification procedures have taken place.
27. Contractor shall remove all existing signs, mailboxes, fences, landscaping, etc., as required to avoid damage during construction and replace them to existing or better condition.
28. The Contractor shall be responsible for managing construction activities to ensure that public streets and right-of-ways are kept clean of mud, dust or debris. Dust abatement shall be maintained by adequate watering of the site by the Contractor.

GRADING, PAVING & DRAINAGE:

29. All materials and workmanship for compaction, fills, grading, rock and paving within the public right-of-way shall conform to City of Salem Standard Construction Specifications.
30. Unless otherwise noted, all grading, rock and paving to conform to Oregon Standard Specifications for Construction (OSSC/ODOT/APWA), 2021 edition.
31. Clear and grub within work limits all surface vegetation, trees, stumps, brush, roots, etc. Do not damage or remove trees except as approved by the Owner's Representative or as shown on the drawings. Protect all roots two inches in diameter or larger.
32. Strip work limits, removing all organic matter, which cannot be compacted into a stable mass. All trees, brush, and debris associated with clearing, stripping or grading shall be removed and disposed of off-site.
33. Except as otherwise allowed by the specifications required by Salem Standard Construction Specifications, drawing details or notes, immediately following stripping and grading operations, compact subgrade to 92% of the maximum dry density per AASHTO T-180 test method (Modified Proctor). Subgrade must be inspected and approved by the Owner's authorized representative before placing, engineered fills or fine grading for base rock.

34. Unless otherwise required by Salem Standard Construction Specifications, Engineered fills shall be constructed and compacted in 6" lifts over approved subgrade. All fills shall be engineered and comply with the Oregon Structural Specialty Code, with each lift compacted to 92% of the maximum dry density per AASHTO T-180 test method (Modified Proctor).
35. Unless otherwise required by Salem Standard Construction Specifications, Granular base/rock shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate), with no more than 10% passing the #40 sieve and no more than 5% passing the #200 sieve.
36. Compact granular base/rock to 92% of the maximum dry density per AASHTO T-180 test method (Modified Proctor). Written base/rock compaction test results from an independent testing laboratory must be received by the Owner's authorized representative before placing AC pavement, and a finished rock grade proof-roll (witnessed by the Owners authorized representative) must be performed.
37. Unless otherwise required by Salem Standard Construction Specifications, A.C. pavement shall conform to OSSC (ODOT/APWA) 00745 (Hot Mixed Asphalt Concrete Pavement) for standard duty mix. Unless otherwise specified or shown on the drawings, base lifts shall be 3/4" dense graded mix, while wearing courses shall be 1/2" dense graded mix. Unless otherwise specified or shown on the drawings, A.C. pavement for parking lots and streets shall be Level 2 mix (50 blow Marshall) per OSSC (ODOT/APWA) 00744.13. A.C. Pavement shall be compacted to a minimum of 91% of maximum density as determined by the Rice standard method. Written AC pavement compaction test results from an independent testing laboratory must be received by the Owner's authorized representative before final payment.
38. Pavement surface shall be a smooth, well-sealed, tight mat without depressions or bird baths. Bony or open graded pavement surfaces shall be repaired to the satisfaction of the Owner's authorized representative, prior to final acceptance of the work.
39. Unless otherwise required by Salem Standard Construction Specifications, HMA/C mixtures shall be placed only when the surface is dry and weather conditions are such that proper handling, finishing and compaction can be accomplished. In no case shall bituminous mixes be placed when the surface temperature is below the minimum established under 2021 OSSC (ODOT/APWA) 00774.40 (AC - Season and Temperature Limitations) or the project specifications, whichever is more stringent.
40. Contractor shall protect new pavement against traffic as required, until it has cooled sufficiently to avoid tracking.
41. For parking lots or private access drives, the final lift of AC pavement shall not be placed until after the building is fully enclosed and weatherproof, unless otherwise approved by the Owner's authorized representative.
42. Unless otherwise shown on the drawings or details, straight grades shall be run between all finish grade elevations and/or finish contour lines shown (exception: where grades are shown across sidewalks, slopes shall be adjusted to ensure that maximum allowable sidewalk cross slopes are not exceeded).
43. Finish pavement grades at transition to existing pavement shall match existing pavement grades or be feathered past joints with existing pavement as required to provide a smooth, free draining surface.
44. All existing or constructed manholes, cleanouts, monument boxes, gas valves, water valves and similar structures shall be adjusted to match finish grade of the pavement, sidewalk, landscaped area or median strip wherein they lie. Verify that all valve boxes and risers are clean and centered over the operating nut.
45. Unless otherwise shown on the drawings, no cut or fill slopes shall be constructed steeper than 3H:1V.
46. Unless otherwise shown on the landscape plans, all planter areas, shall be backfilled with approved topsoil minimum 8" thick. Stripping materials shall not be used for planter backfill.
47. Contractor shall seed and mulch (uniformly by hand or hydroseeded) all exposed slopes and disturbed areas which are not scheduled to be landscaped, including trench restoration areas. If the Contractor fails to apply seed and mulch in a timely manner during periods favorable for germination, or if the seeded areas fail to germinate, the Owner's Representative may (at his discretion) require the Contractor to install sod to cover such disturbed areas.

CURBS & SIDEWALKS:

48. Unless otherwise shown or indicated on the drawings, 6-inches nominal curb exposure used for design of all parking lot and street grades.
49. Where new curbing connects to existing curbing or is installed along existing streets or pavement, the gutter grade shall match the existing street grades so as to allow drainage from the street to the gutter and through any transitions. The Contractor shall notify the Owner's Representative in writing of any grade discrepancies or problems prior to curb placement.
50. Contractor shall construct all handicap access ramps in accordance with current ADA requirements.
51. Sidewalks shall be a minimum of 4-inches thick. Commercial use driveways and alley approaches shall be minimum 8-inches thick. All curbs, sidewalks and driveways shall be constructed using 3300-psi concrete, and shall be cured with Type 1 or Type 1D clear curing compound. All sidewalks shall be ADA compliant.
52. Curb & sidewalk concrete shall be placed only during periods when it will not be damaged by rain (prevent unhardened concrete from precipitation). Concrete shall not be placed on frozen base/rock. Do not begin concrete placement until temperature in the shade is a minimum of 35°F and rising, and stop placement if air temperature falls below 35°F. Protect concrete from freezing for a minimum of 5 days after placement per OSSC (ODOT/APWA) 00440.40.d & 00756.40 or the project specifications, whichever is more stringent.

53. Contraction joints shall be installed directly over any pipes that cross under the sidewalk, to control cracking. In general, cracks in new curbs or sidewalks (at locations other than contraction joints) are not acceptable, and cracked panels shall be removed & replaced unless otherwise approved by the Approving Agency and the design engineer.
54. All sidewalks shall be ADA compliant. Direction of sidewalk cross slope shall conform with the slope direction shown on the grading plan. Sidewalk cross slopes shall not exceed 1:67 (1.5%) nor be less than 1%. Longitudinal slope shall not exceed 1:20 (5%).
55. Where trench excavation requires removal of PCC curbs and/or sidewalks, the curbs and/or sidewalks shall be sawcut and removed at a toled joint unless otherwise authorized in writing by the Approving Agency. The sawcut lines shown on the drawings are schematic and not intended to show the exact alignment of such cuts.
56. Unless otherwise shown on the drawings, areas along curbs and sidewalks shall be backfilled with approved topsoil, as well as being seeded and mulched (or hydroseeded).

PIPED UTILITIES:

57. All tapping of existing sanitary sewer, storm drain mains, and manholes must be done by City forces. 588-6333. Taps are generally available within two business days.
59. The Contractor shall have appropriate equipment on site to produce a firm, smooth, undisturbed subgrade at the trench bottom, true to grade. The bottom of the trench excavation shall be smooth, free of loose materials or tooth grooves for the entire width of the trench prior to placing the granular bedding material.
60. All pipes shall be bedded with minimum 6-inches of 3/4"-0 crushed rock bedding and backfilled with compacted 3/4"-0 crushed rock in the pipe zone (crushed rock shall extend a minimum of 12-inches over the top of the pipe in all cases). Unless CDF or other backfill is shown or noted on the drawings, crushed rock trench backfill shall be used under all improved areas, including pavement, sidewalks, foundation slabs, buildings, etc.
61. Granular trench bedding and backfill shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate), 3/4"-0. Unless otherwise shown on the drawings, compact granular backfill to 92% of the maximum dry density per AASHTO T-180 test method (Modified Proctor).
62. Contractor shall arrange to abandon existing sewer and water services not scheduled to remain in service in accordance with approving agency requirements.
63. All piped utilities abandoned in place shall have all openings closed with concrete plugs with a minimum length equal to 2 times the diameter of the abandoned pipe.
64. The end of all utility service lines shall be marked with a 2-x-4 painted white and wired to pipe stub. The pipe depth shall be written on the post in 2" block letters.
65. All non-metallic water, sanitary and storm sewer piping shall have an electrically conductive insulated 12 gauge solid core copper tracer wire the full length of the installed pipe using blue wire for water and green wire for storm and sanitary piping. Tracer wire shall be extended up into all valve boxes, catch basins, manholes and lateral cleanout boxes. Tracer wire penetrations into manholes shall be within 18 inches of the rim elevation and adjacent to manhole steps. The tracer wire shall be tied to the top manhole step or otherwise supported to allow retrieval from the outside of the manhole. All tracer wire splices shall be made with waterproof splices or waterproof/corrosion resistant wire nuts.
66. No trenches in sidewalks, roads, or driveways shall be left in an open condition overnight. All such trenches shall be closed before the end of each workday and normal traffic and pedestrian flows restored.
67. Before mandrel testing, TV inspection or final acceptance of gravity pipelines, all trench compaction shall be completed and all sewers and storm drains flushed & cleaned to remove all mud, debris & foreign material from the pipelines, manholes and/or catch basins.
68. Where future extensions are shown upstream of new manholes (sewer or storm), catch basins or junction boxes, pipe stubs (with gasketed caps) shall be installed at design grades to a point 2' minimum outside of the structure.

WATER SYSTEM:

69. City forces to operate all valves, including fire hydrants, on existing public mains.

70. All water mains shall be Class 52 ductile iron.

71. All fittings 4-inches through 24-inches in diameter shall be ductile iron fittings in conformance with AWWA C-153 or AWWA C-110. The minimum working pressure for all MJ cast iron or ductile iron fittings 4-inches through 24-inch in diameter shall be 350 psi for MJ fittings and 250 psi for flanged fittings.

72. All water mains to be installed with a minimum 36 inch cover to finish grade unless otherwise noted or directed. Water service lines shall be installed with a minimum 30-inch cover. Deeper depths may be required as shown on the drawings or to avoid obstructions.

73. Unless otherwise shown or approved by the Engineer, all valves shall be flange connected to adjacent tees or crosses.

74. Thrust restraint shall be provided on all bends, tees and other direction changes per Approving Agency requirements and as specified or shown on the drawings.

75. Water service pipe 2-inch and smaller on the public side of the meter shall be Type K soft copper tubing conforming to ASTM B-88. Water service pipe 3-inch and larger shall conform to the construction drawings and approving agency standards.

76. Unless otherwise noted, water service pipe 3-inch and smaller on the private side of the meter shall be Schedule 40 PVC. Unless otherwise specified, private water service piping shall be hydrostatically pressure tested to a minimum of 150% of the maximum static pressure at the site. All materials and workmanship for all private water lines, including water lines located within any building envelope, shall be installed in conformance with Uniform Plumbing Code requirements. All water service pipe on the private side of the meter shall be installed by a licensed plumber in accordance with Uniform Plumbing Code requirements.

77. Domestic and fire backflow prevention devices and vaults shall conform to requirements of public and/or private agencies having jurisdiction. The Contractor shall be responsible for having backflow devices tested and certified prior to final acceptance of the work.

78. Contractor shall provide all necessary equipment and materials (including plugs, blowoffs, valves, service taps, etc.) required to flush, test and disinfect waterlines per the Approving Agency requirements.

79. The work shall be performed in a manner designated to maintain water service to buildings supplied from the existing waterlines. In no case shall service to any main line or building be interrupted for more than four (4) hours in any one-day. Contractor shall notify the Approving Agency and all affected residents and businesses a minimum of 24 business hours (1 business day) before any interruption of service.

80. Where new waterlines cross below or within 18-inches vertical separation above a sewer main or sewer service lateral, center one full length of waterline pipe at point of crossing the sewer line or sewer lateral. In addition (unless otherwise approved in writing by the Approving Agency, existing sewer mains and/or service laterals within this zone shall be replaced with a full length of Class 50 Ductile Iron or C-900 PVC pipe (OR 18" centered at the crossing in accordance with OAR 333-061 and Approving Agency requirements. Connect to existing sewer lines with approved rubber couplings. Example: For an 8-inch waterline with 36-inches cover, 4-inch service lateral inverts within 5.67-feet (68-inches) of finish grade must be DI or C-900 PVC at the crossing.

81. All waterlines, services and appurtenances shall be pressure tested for leakage. All testing shall conform to requirements as outlined in the specifications, Approving Agency standards and/or testing forms. The hydrostatic test shall be performed with all service line corporation stops open and meter stops closed, and with all hydrant line valves open. Prior to the start of each pressure test, the position of all mainline valves, hydrant line valves and service line corporation stops in the test segment shall be verified.

82. After the pressure test and prior to disinfecting, the water lines shall be thoroughly flushed through hydrants, blow offs or by other approved means.

83. Disinfection & Bacteriological Testing. All water mains and service lines shall be chlorine disinfected per Approving Agency requirements, AWWA C-651 or OAR 333-061 (25 mg/L minimum chlorine solution, 24 hours contact time), whichever is more stringent. Unless otherwise approved by the Approving Agency, a Representative from the Approving Agency shall witness the application of the chlorine solution and the chlorine testing at the end of the 24 hour contact period. After the 24 hour chlorine contact period, the free chlorine concentration shall be checked, and if it is found to be 10 mg/L or more, the chlorine solution shall be drained (otherwise the line shall be rechlorinated), the waterline flushed with potable water, and a minimum of two consecutive samples taken at least 24 hours apart shall be collected from the waterline for microbiological analysis (i.e. one sample immediately after flushing, and another sample 24 hours later). Contractor to pay for laboratory analysis of water samples taken under the supervision of the Approving Agency. If the results of both analyses indicate that the water is free of coliform organisms, the waterline may be placed in service. Should the initial treatment prove ineffective, the chlorination shall be repeated until confirmed tests show acceptable results.

84. Disinfection of Connections. For connections which cannot be disinfected with the waterline mainlines as noted above, all fittings, valves and appurtenances, including tool surfaces which will come in contact with potable water, shall be thoroughly cleaned by washing with potable water and then swabbed or sprayed with a one percent (1%) hypochlorite solution (10,000 mg/L) in accordance with the requirements of AWWA C-651 and OAR 333-061.

FRANCHISE & PRIVATE UTILITIES:

85. Unless otherwise shown on the drawings or approved by jurisdiction having authority, all new franchise and private utilities (power, cable TV, telephone, gas, data, communication, control, alarms, etc.) shall be installed underground. Installation of such utilities or associated conduits in a common trench with public water, sanitary sewer, or storm sewer is prohibited.
86. Contractor shall coordinate with gas, power, telephone, and cable TV Company for location of conduits in common trenches, as well as location or relocation of vaults, pedestals, etc. The Contractor shall be responsible for providing franchise utility companies adequate written notice of availability of the open trench (typically 10 days minimum), and reasonable access to the open trench. Unless otherwise approved in writing by the Approving Agency, all above-grade facilities shall be located in PUEs (where PUEs exist or will be granted by the development), and otherwise shall be placed in a location outside the proposed sidewalk location.

87. Unless otherwise approved by the Approving Agency, installation of private utilities (including either franchise utility or sewer service) in a common trench with water or within 3 feet horizontally of and paralleling public water, sanitary sewer or storm drains is prohibited.

88. Power, telephone and TV trenching and conduits shall be installed per utility company requirements with pull wire. Contractor shall coordinate with utility company for size, location and type of conduit before construction, and shall ensure that trenches are adequately prepared for installation per utility company requirements. All changes in direction of utility conduit runs shall have long radius steel bends.

89. Contractor shall notify and coordinate with franchise utilities for removal or relocation of power poles, vaults, pedestals, manholes, etc. to avoid conflict with Public utility structures, fire hydrants, meters, sewer or storm laterals, etc.

STORM DRAIN SYSTEM:

90. Storm sewer pipe materials shall conform to the construction drawings and Approving Agency's requirements. Unless otherwise noted or shown on the drawings, storm sewer pipe materials with watertight joints shall conform to the attached "Storm Pipe Table". Contractor shall use uniform pipe material on each pipe run between structures unless otherwise directed or approved. Jointed HDPE pipe shall not be used for slopes exceeding ten percent (10%). All materials and workmanship for all private storm drains, including storm drains located within any building envelope, shall be installed in conformance with Uniform Plumbing Code requirements.

91. Contractor shall designate the pipe material actually installed on the field record drawings and provide this information for inclusion on the as-built drawings.

92. Catch basins and junction boxes shall be set square with buildings or with the edge of the parking lot or street wherein they lie. Storm drain inlet structures and paving shall be adjusted so water flows into the structure without ponding water.

93. Unless otherwise approved by the Engineer, all storm drain connections shall be by manufactured tees or saddles.

94. Unless otherwise shown on the drawings, all storm pipe inlets & outfalls shall be beveled flush to match the slope wherein they lie.

95. Sweep (deflect) storm sewer pipe into catch basins and manholes as required. Maximum joint deflection shall not exceed 5 degrees or manufacturers recommendations, whichever is less.

96. Unless otherwise shown or directed, install storm sewer pipe in accordance with manufacturer installation guidelines.

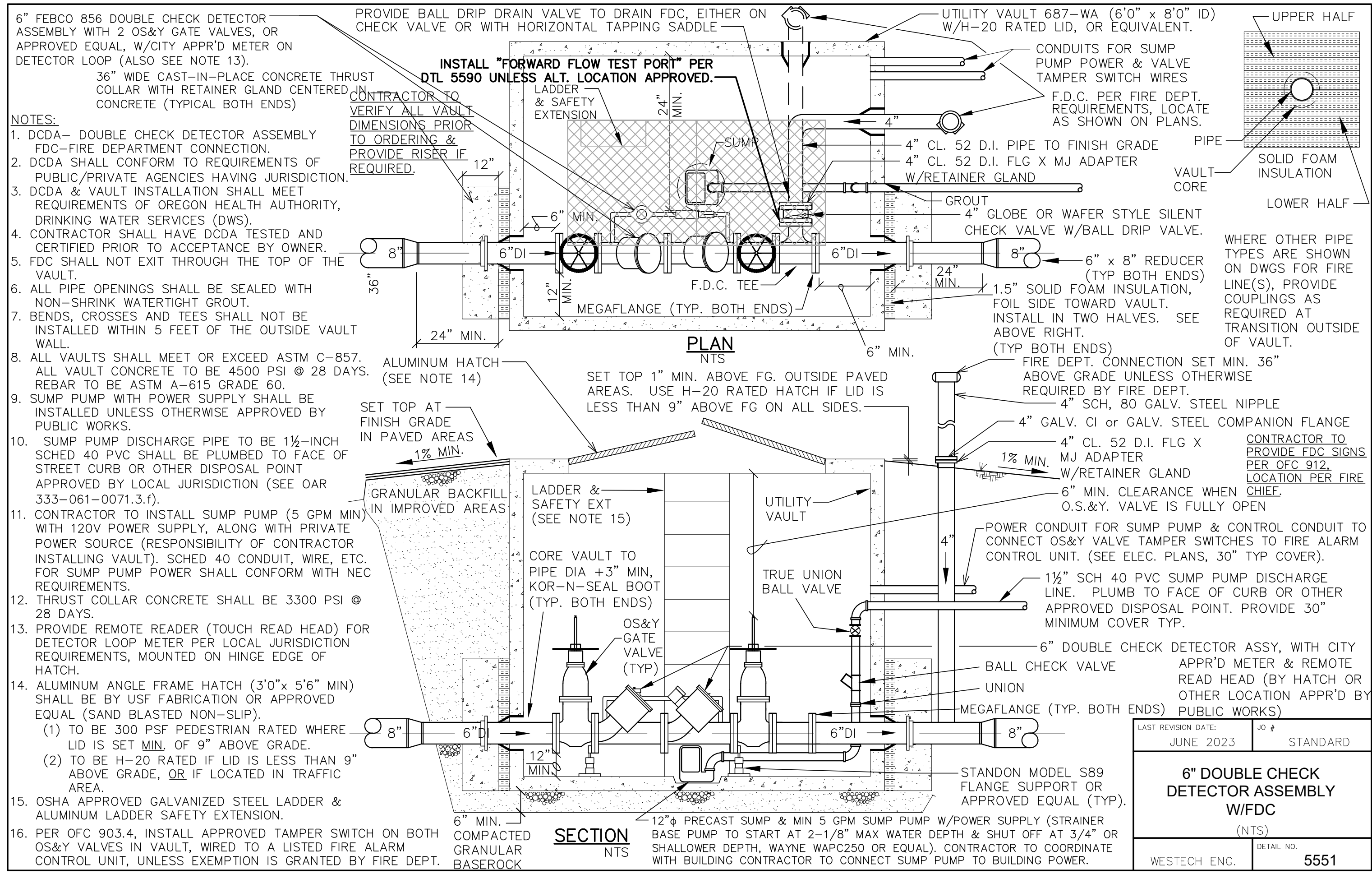
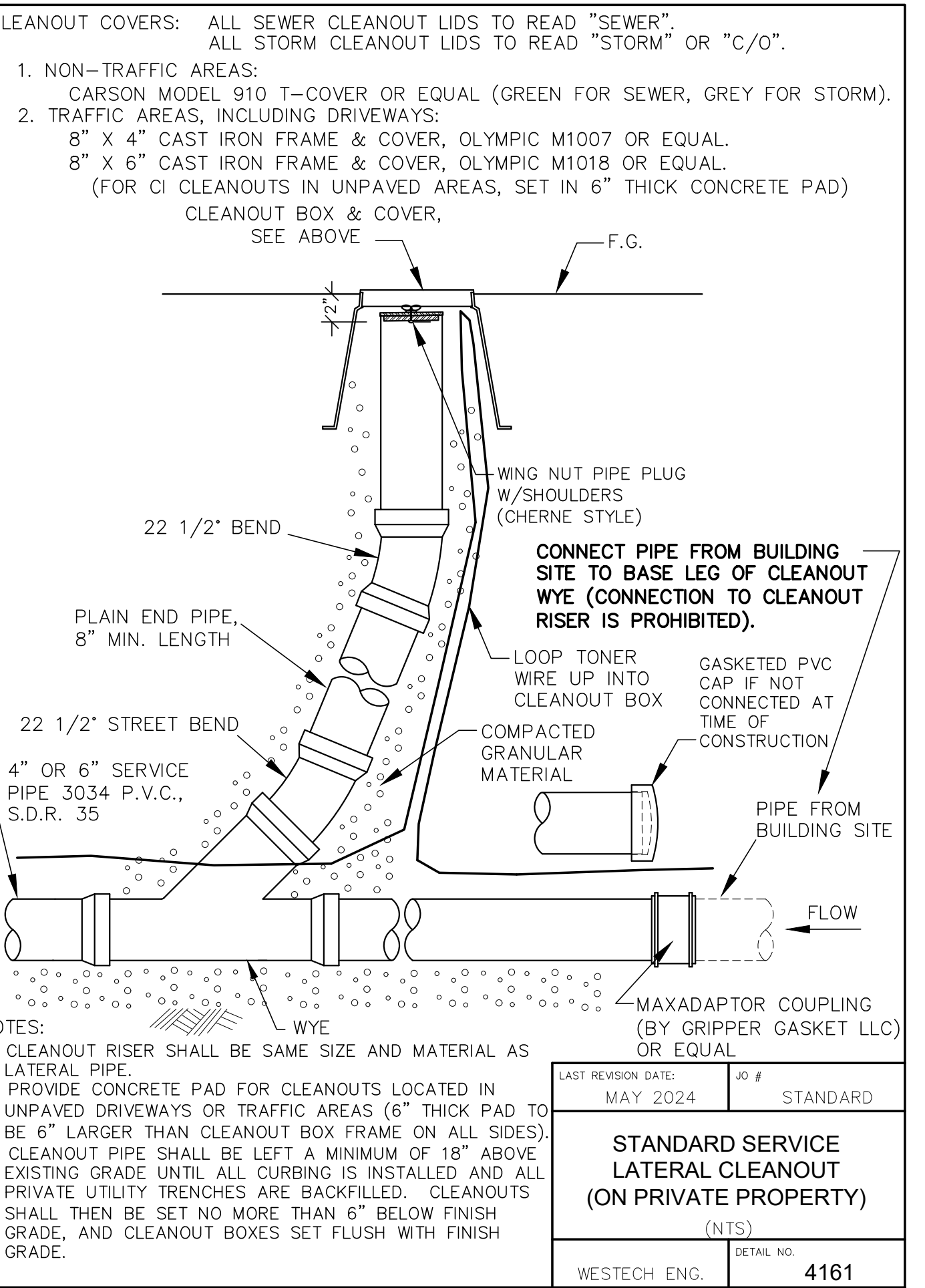
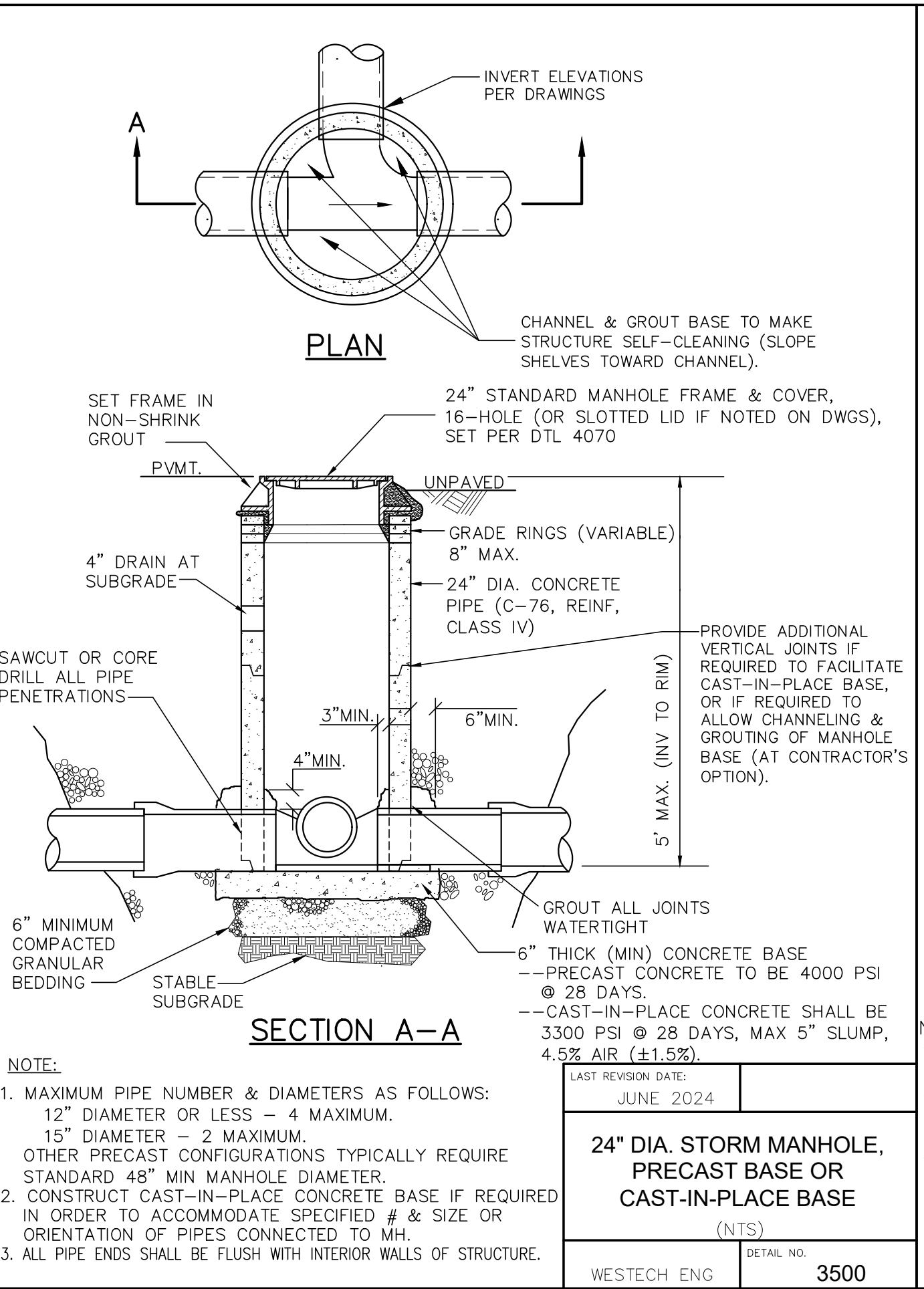
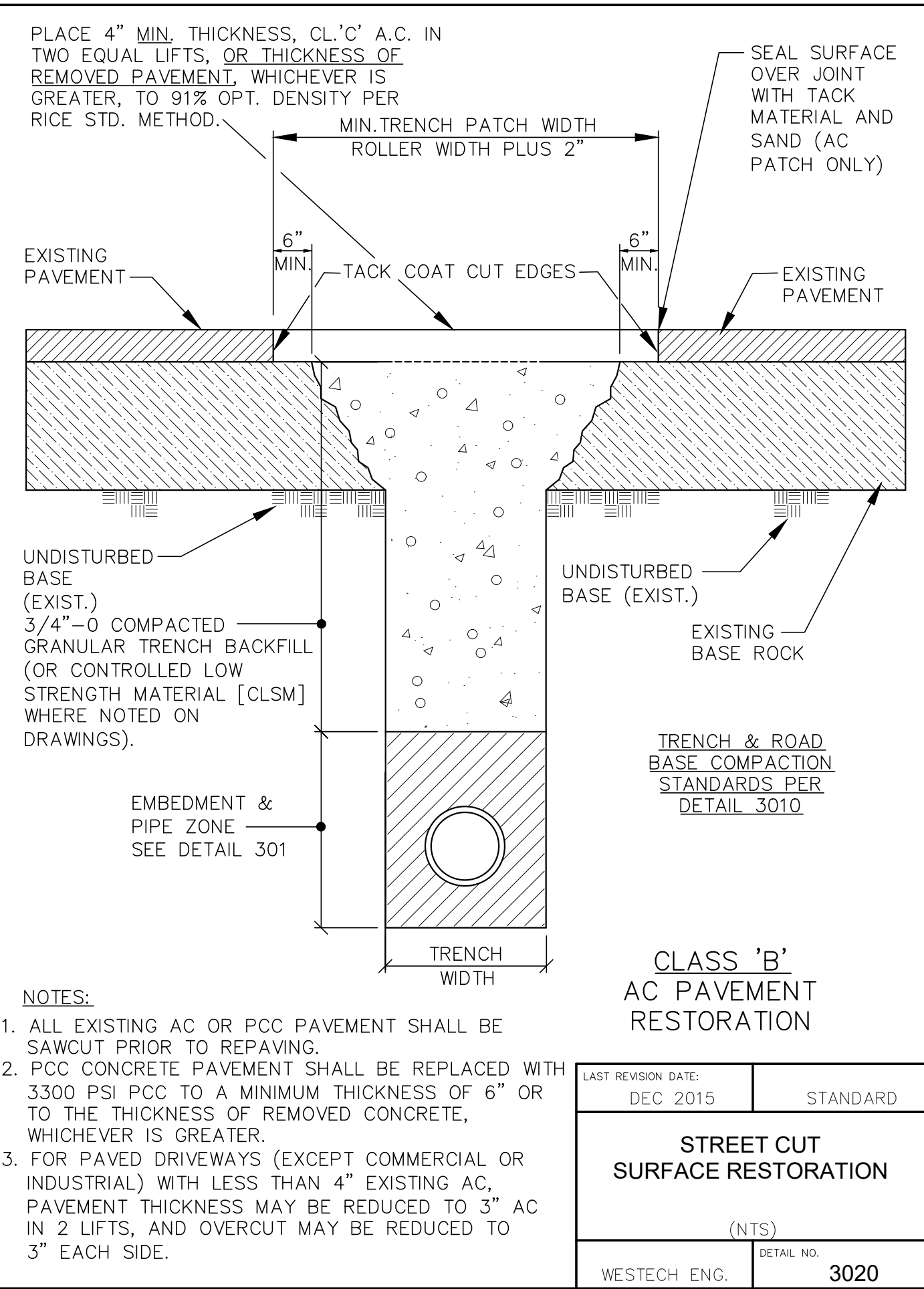
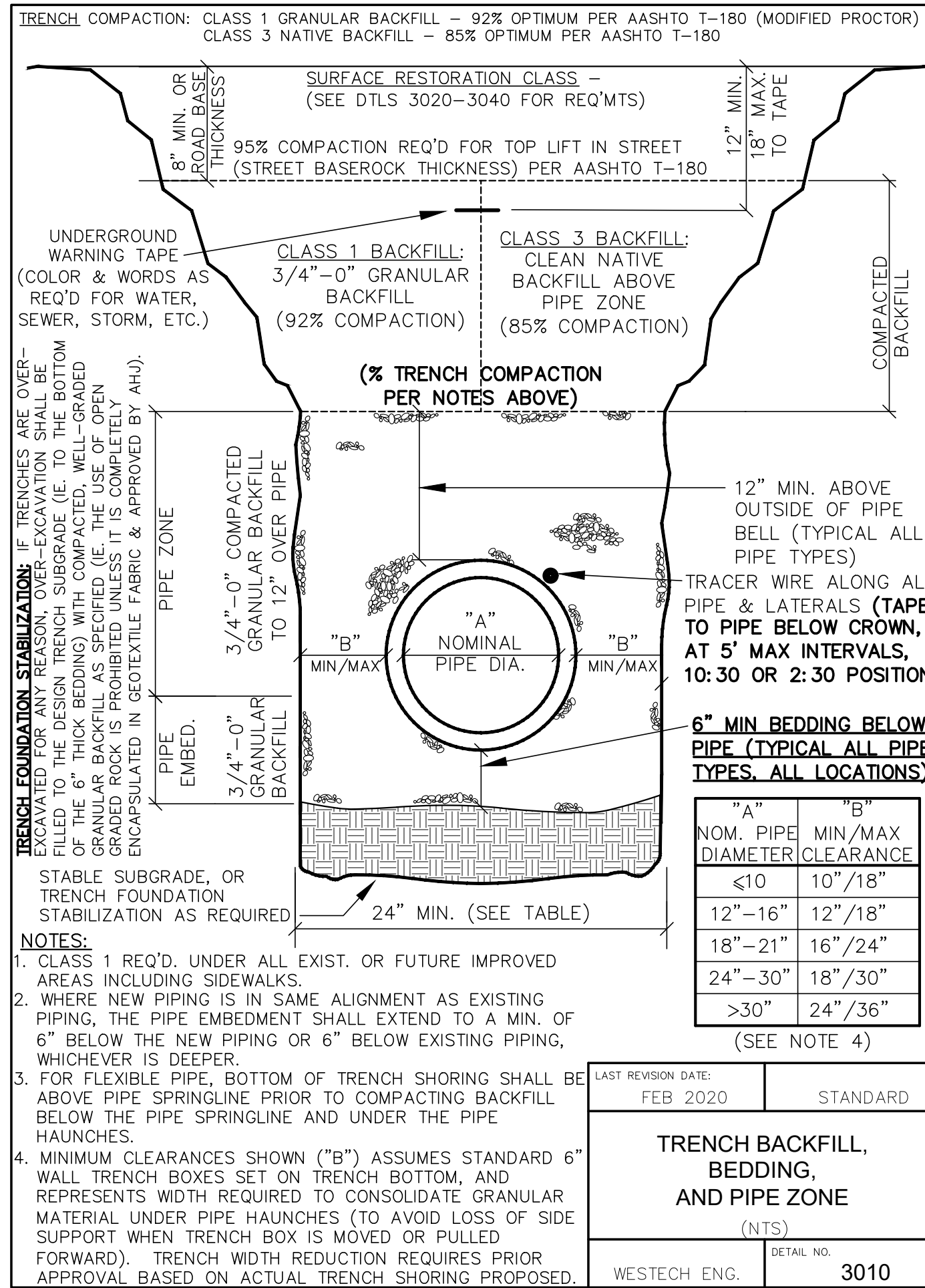
97. After manhole channeling and prior to mandrel testing or final acceptance, flush and clean all sewers, and remove all foreign material from the mainlines, manholes and catch basins.

98. Mandrel Testing. Contractor shall conduct deflection test of flexible storm sewer pipes by pulling an approved mandrel through the completed pipeline following trench compaction. The diameter of the mandrel shall be 95% of the initial pipe diameter. Test shall be conducted not more than 30 days after the trench backfilling and compaction has been completed.

99. TV Inspection. Upon completion of all storm sewer construction, testing and repair, the Contractor shall conduct a color TV acceptance inspection of all mainlines in accordance with OSSC (ODOT/APWA) 445.74 to determine condition and grade of equipment of OSSC (ODOT/APWA) 445.40.b. The TV inspection shall be conducted by an approved technical service which is equipped to make audio-visual recordings of the TV inspections on DVD (VHS video tape acceptable only upon prior written approval by Public Works). Unless otherwise required by the agency with jurisdiction, a standard 1-inch diameter ball shall be suspended in front of the camera during the inspection to determine the depth of any standing water. Sufficient water to reverse grades shall be discharged into the pipe immediately prior to initiation of the TV inspection. The DVD and written report shall be delivered to the Approving Agency.

100. Prior to acceptance, the Owner's Representative may lamp storm lines upstream & downstream of structures to verify that the pipes are clean and there is no grout or concrete in the mainlines, and that there are no observable bellies in the line. When necessary, sufficient water to reveal low areas shall be discharged into the pipe by the Contractor prior to any such inspection by the Owner's Representative or the Approving Agency.

REQUIRED TESTING AND FREQUENCY TABLE		Party Responsible for payment	
<i>Contractor to notify Owner's Representative prior to all testing, to allow Owner's Representative to be present if desired.</i>		Contractor	Others (see note 1)
Piped Utilities, All			
Trench Backfill	1 Test/200 Foot Trench/Lift (4 min)	✓	See note 2
Trench AC Restoration	1 Test/300 Foot Trench (4 min)	✓	See note 2
Storm			
Mandrel	95% of actual inside diameter	✓	See note 4
TV Inspection	All. Lines must be cleaned prior to TV work	✓	
Water			
Pressure Test	(to be witnessed by Owner's Representative or approving agency)	✓	See note 4
Bacterial Water Test	Per Oregon Health Division	✓	See note 2
Chlorine Residual Test	Per City Requirements	✓	
Concrete, Block, etc.			
Slump, Air & Cylinders for structural & reinforced concrete, equipment slabs, curbs, sidewalks & PCC pavements. Unless otherwise specified, one set of cylinders per 100 cubic yards (or portion thereof) of each class of concrete placed per day. Slump & air tests required on same load as cylinders.		✓	See note 2
Note 1: "Others" refers to Owner's authorized Representative or Approving Agency as applicable. Contractor responsible for scheduling testing. All testing must be completed prior to performing subsequent work.			
Note 2: Testing must be performed by an approved independent testing laboratory.			
Note 3: In addition to in-place density testing, the subgrade and base rock shall be proof-rolled with a loaded 10 yard dump truck provided by the Contractor. Base/rock proofroll shall take place immediately prior to (within 24 hours of) paving, and shall be witnessed by the Owner's authorized Representative or approving agency. Location and pattern of testing and proofroll to be as approved or directed by said Owner's authorized Representative or approving agency.			
Note 4: To be witnessed by the Owner's Representative or approving agency. The Contractor shall perform pretests prior to scheduling witnessed waterline or sanitary sewer pressure tests, or pipeline mandrel test.			
Note 5: The approved independent laboratory retained by the Contractor shall provide a certification (stamped by an engineer licensed in the State of Oregon) that the subgrade was prepared and all engineered fills were placed in accordance with the provisions of the construction drawings and the contract documents.			
<i>Contractor to notify Owner's Representative prior to all testing, to allow Owner's Representative to be present if desired.</i>			



**WESTTECH ENGINEERING, INC.**  
CONSULTING ENGINEERS AND PLANNERS

3841 Fairview Industrial Dr. S.E., Suite 100, Salem, OR 97302  
Phone: (503) 585-2474 Fax: (503) 585-3986  
E-mail: westtech@westtech-eng.com

REGISTERED PROFESSIONAL ENGINEER  
76415PE  
DIGITALLY SIGNED  
OREGON  
NOV 12 2024  
WILLIAM J. WELLS  
RENEW: 6/30/2026

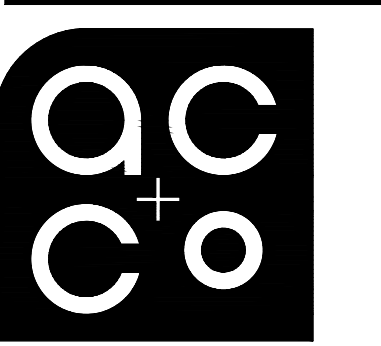
In the event conflicts are discovered between the original signed and sealed documents prepared by the Architect and/or their Consultants, and any copy of the documents transmitted by mail, fax, electronically or otherwise, the original signed and sealed documents shall govern.

WE JOB NO. 3475.0000.0  
JOB NO. 2023.0039

DATE JUNE 7, 2024

DRAWN IH

REVISIONS



**ARCHITECTURE COMMUNITY**  
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**ARCHES LODGE**  
CONSTRUCTION DETAILS

1875 FISCHER RD NE  
SALEM, OREGON 97305

SHEET

**C5.0**

HALF SECTION  
RIGID PAVEMENT  
WITH ASPHALT  
CONCRETE SURFACE

MATCH EXIST. P.V.M.T.  
THICKNESS, 6" MIN.  
CLASS 4000 (P.S.I.) P.C.C.  
UNLESS OTHERWISE  
SPECIFIED BY THE  
ENGINEER  
SEE NOTE 5

MATCH EXIST. CLASS B OR CLASS C  
ASPHALT CONCRETE

EXISTING ASPHALT PAVEMENT

EXISTING P.C.C.

COMPACTED TRENCH BACKFILL  
OR CONTROLLED  
DENSITY BACKFILL

12" OR 18"  
SEE NOTE 4

TRENCH WIDTH

12" OR 18"  
SEE NOTE 4

3/4"-0 COMPACTED  
CRUSHED ROCK 6"  
MIN. THICKNESS  
OR CONTROLLED  
DENSITY BACKFILL

SAW VERTICALLY (NOTE 2)

EXISTING P.C.C. PAVEMENT

HALF SECTION  
P.C.C. PAVEMENT

MATCH EXIST. P.V.M.T.  
THICKNESS, 6" MIN.  
CLASS 4000 (P.S.I.) P.C.C.  
UNLESS OTHERWISE  
SPECIFIED BY THE  
ENGINEER  
SEE NOTE 5

MATCH EXIST. CLASS B OR CLASS C  
ASPHALT CONCRETE

EXISTING ASPHALT PAVEMENT

EXISTING P.C.C.

COMPACTED TRENCH BACKFILL  
OR CONTROLLED  
DENSITY BACKFILL

12" OR 18"  
SEE NOTE 4

TRENCH WIDTH

12" OR 18"  
SEE NOTE 4

3/4"-0 COMPACTED  
CRUSHED ROCK 6"  
MIN. THICKNESS  
OR CONTROLLED  
DENSITY BACKFILL

SAW VERTICALLY (NOTE 2)

EXISTING P.C.C. PAVEMENT

CLASS B  
ASPHALT CONCRETE  
REPLACEMENT PATCH

EXISTING OIL MAT  
OR GRANULAR  
BASE

COMPACTED TRENCH BACKFILL  
OR CONTROLLED  
DENSITY BACKFILL

12" OR 18"  
SEE NOTE 4

TRENCH WIDTH

12" OR 18"  
SEE NOTE 4

3/4"-0 COMPACTED CRUSHED  
ROCK, MATCH EXISTING BASE  
OR 6" MIN. OR CONTROLLED  
DENSITY BACKFILL

REMOVE LOOSENEED ASPHALT  
CONCRETE SURFACE

EXISTING BASE

VERTICAL CUT (NOTE 2)

REMOVE LOOSENEED ASPHALT  
CONCRETE SURFACE

EXISTING BASE

12" OR 18"  
SEE NOTE 4

TRENCH WIDTH

12" OR 18"  
SEE NOTE 4

3/4"-0 COMPACTED CRUSHED  
ROCK, MATCH EXISTING BASE  
OR 6" MIN. OR CONTROLLED  
DENSITY BACKFILL

REMOVE LOOSENEED ASPHALT  
CONCRETE SURFACE

EXISTING BASE

TYPICAL PATCH FOR RIGID PAVEMENT

TYPICAL PATCH FOR FLEXIBLE PAVEMENT

NOTES

1. FINAL CUTS IN A.C. PAVEMENT SHALL BE MADE WITH A CONCRETE SAW. MORE THAN ONE CUT MAY BE REQUIRED IN AC PAVEMENTS.  
2. CUTS IN P.C.C. PAVEMENT SHALL BE MADE WITH A CONCRETE SAW.  
3. 1"-0 CRUSHED AGGREGATE MAY BE SUBSTITUTED FOR 3/4"-0.  
4. PAVEMENT REPLACEMENT WIDTH SHALL BE: TRENCH WIDTH PLUS 12 INCHES ON EACH SIDE FOR CONTROLLED DENSITY BACKFILL, AND TRENCH WIDTH PLUS 18 INCHES ON EACH SIDE FOR ROCK BACKFILL.  
5. PAVEMENT REPLACEMENT THICKNESS SHALL BE AS SHOWN ABOVE FOR ROCK TRENCH BACKFILL FOR CONTROLLED DENSITY TRENCH BACKFILL. PAVEMENT REPLACEMENT THICKNESS SHALL BE AS FOLLOWS:  
STREET CLASSIFICATION    ARTERIAL    COLLECTOR    LOCAL  
PORTLAND CEMENT CONCRETE    8"P.C.C.    7"P.C.C.    6"P.C.C.  
A.C. OVER P.C.C.    4"A.C.    4"A.C.    4"A.C.  
ASPHALT CONCRETE    4"A.C.    4"A.C.    4"A.C.

Approved *Karl O. Shultz* 9-15-99  
City Engineer Date

REVISION

CITY OF SALEM  
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN  
PAVEMENT PATCHING

DRAWN BY GS

CHECKED BY RWL

NO.309

NOTES

1. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:  
$$\text{BEARING AREA} = ( \text{TEST PRESSURE} / 150 ) \times ( 2000 / \text{SOIL BEARING STRESS} ) \times ( \text{TABLE VALUE} )$$
  
2. ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:  
$$\text{VOLUME} = ( \text{TEST PRESSURE} / 150 ) \times ( \text{TABLE VALUE} )$$

Approved *Karl O. Shultz* 9-15-99  
City Engineer Date

REVISION

CITY OF SALEM  
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN  
HORIZONTAL THRUST BLOCKING

DRAWN BY: I.D.F.

CHECKED BY: R.W.L.

NO.401

NOTES

1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.  
2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.  
3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.  
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.  
5. SEE STANDARD PLAN NO. 402 FOR VERTICAL BEND ANCHOR BLOCK DETAILS.  
6. SEE STANDARD PLAN NO. 403 AND 404 FOR TIED BACK THRUST BLOCK DETAILS.  
7. MAY NOT WORK OUT FOR ALL FITTING SIZES - CONFIRM USE OF THIS BLOCKING CONFIGURATION WITH ENGINEER.

Approved *Karl O. Shultz* 9-15-99  
City Engineer Date

REVISION

CITY OF SALEM  
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN  
HORIZONTAL THRUST BLOCKING

DRAWN BY: I.D.F.

CHECKED BY: R.W.L.

NO.401

NOTES

1. THE RODS TO BE 5/8" A307 STEEL BOLT STOCK WITH 14,000 PSI TENSILE STRENGTH OR APPROVED EQUAL. ONE TIE ROD PER SIDE.  
2. IF HYDRANT IS NOT INSTALLED ON STUB.  
a. DELETE PIER BLOCK AND GRAVEL FOR DRAINAGE.  
b. BOLT BLIND FLANGE OVER OPEN FLANGE OF GATE VALVE.  
3. DO NOT PLACE THRUST BLOCKS BEHIND TEE OR HYDRANT.  
4. PUMPER OUTLET TO FACE THE DIRECTION OF ACCESS.  
5. THERE SHALL BE A MINIMUM OF 18" HORIZONTAL DISTANCE AROUND HYDRANT.  
6. WHEN PLACED ADJACENT TO CURB, HYDRANT PORT SHALL BE 24" FROM FACE OF CURB.  
7. FIRE HYDRANTS SHALL BE PLACED TO PROVIDE A MINIMUM OF 8' CLEARANCE FROM DRIVEWAYS, POLES, AND OTHER OBSTRUCTIONS.  
8. VERTICAL EXTENSIONS REQUIRED FOR HYDRANT SYSTEMS SHALL BE INSTALLED TO THE MANUFACTURER'S SPECIFICATIONS.  
9. FOR LINE LENGTHS EXCEEDING 16' USE FULLY RESTRAINED PIPE SYSTEM, "MEGA-LUG" OR APPROVED EQUAL.

Approved *Karl O. Shultz* 1-7-00  
City Engineer Date

REVISION

CITY OF SALEM  
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN  
FIRE HYDRANT INSTALLATION

DRAWN BY IDF

CHECKED BY D.W.

NO.413

NOTES

1. 1 1/2"-3/4" GRAVEL TO ELEVATION 6" ABOVE DRAIN HOLE FOR DRAINAGE.

Approved *Karl O. Shultz* 1-7-00  
City Engineer Date

REVISION

CITY OF SALEM  
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN  
FIRE HYDRANT INSTALLATION

DRAWN BY IDF

CHECKED BY D.W.

NO.413

NOTES

1. 1 1/2"-3/4" GRAVEL TO ELEVATION 6" ABOVE DRAIN HOLE FOR DRAINAGE.

Approved *Karl O. Shultz* 1-7-00  
City Engineer Date

REVISION

CITY OF SALEM  
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN  
FIRE HYDRANT INSTALLATION

DRAWN BY IDF

CHECKED BY D.W.

NO.413

WESTECH ENGINEERING, INC.  
CONSULTING ENGINEERS AND PLANNERS

WE

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E-mail: westech@westech-eng.com

REGISTERED PROFESSIONAL  
ENGINEER  
76415PE  
DIGITALLY SIGNED  
OREGON  
NOV 12 2024  
WILLIAM J. WELLS

RENEWS: 6/30/2026

In the event conflicts are discovered between the original signed and sealed documents prepared by the Architect and/or their Consultants, and any copy of the documents transmitted by mail, fax, electronically or otherwise the original signed and sealed documents shall govern.

WE JOB NO. 3475.0000.0  
JOB NO. 2023.0039

DATE JUNE 7, 2024

DRAWN IH

REVISIONS

ac  
+  
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