

**RECORD DRAWINGS**  
APPROVED

NAME: *[Signature]* ENGINEERING MANAGER 03/27/19  
TITLE: DATE:

**TD&H**  
Engineering

208.746.0938 • tdhengineering.com

210 MAIN STREET • LEWISTON, IDAHO 83501

THESE RECORD DRAWINGS WERE PREPARED  
BASED UPON CONSULTANT DESIGN DRAWINGS,  
ADDENDA AND FIELD NOTES PROVIDED BY THE  
CONSTRUCTION CONTRACTOR.

# KENWORTH SALES SITE DEVELOPMENT

## LEWISTON, IDAHO

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Engineering

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GREAT FALLS-BOZEMAN-KALISPELL-SHELBY MONTANA  
SPokane WASHINGTON  
LEWISTON IDAHO  
WATFORD CITY NORTH DAKOTA

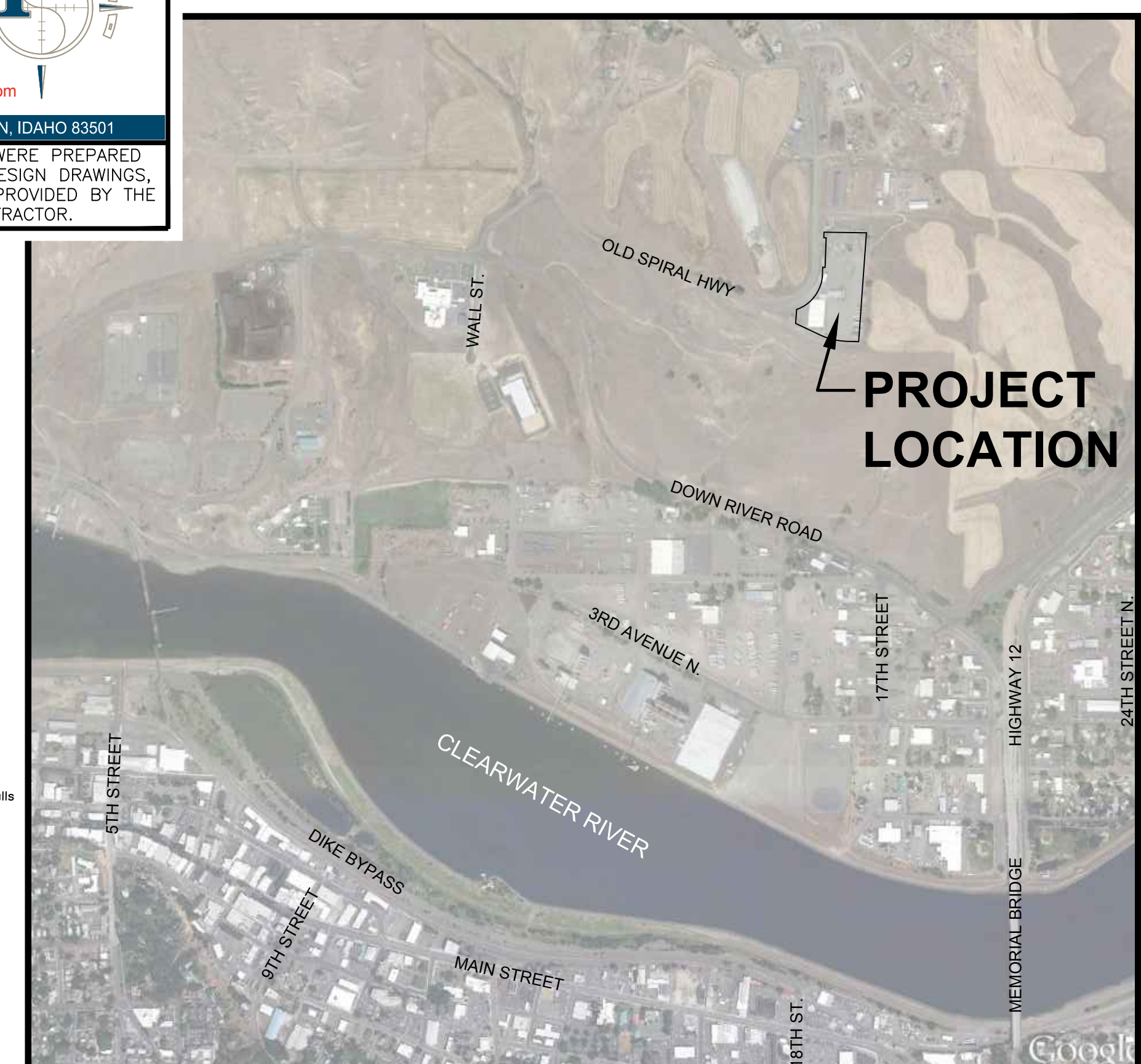
PROFESSIONAL ENGINEER  
LICENSE NO. 15860  
STATE OF IDAHO  
DAVID RAE CALDWELL

### GENERAL NOTES

- 1) THE CONTRACTOR SHALL INVESTIGATE ON SITE AND VERIFY ALL CONDITIONS AND DIMENSIONS OF THE PROJECT AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY IN THE CONTRACT DOCUMENTS REQUIRING MODIFICATION PRIOR TO PROCEEDING.
- 2) THE CONTRACTOR SHALL COORDINATE THE WORK SCHEDULE SO AS TO HAVE A MINIMUM IMPACT ON THE EXISTING TRAFFIC.
- 3) SITE DISTANCES FOR ABUTTING PROPERTIES, DRIVEWAYS, AND INTERSECTIONS MUST BE MAINTAINED.
- 4) THE CONTRACTOR SHALL TAKE ALL NECESSARY PREVENTATIVE MEASURES TO PROTECT THE EXISTING IMPROVEMENTS. ANY DAMAGE SHALL BE REPLACED AT NO COST TO THE OWNER.
- 5) OWNER'S PROPERTY CORNERS SHALL BE PROTECTED AT ALL TIMES, AND THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF IDAHO TO REFERENCE ALL CORNERS. UPON COMPLETION OF THE PROJECT, ALL EXISTING CORNERS DAMAGED BY CONSTRUCTION SHALL BE REPLACED BY A PROFESSIONAL LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
- 6) A RIGHT-OF-WAY PERMIT SHALL BE OBTAINED THROUGH THE PUBLIC WORKS DEPARTMENT PRIOR TO ANY WORK BEGINNING WITHIN PUBLIC RIGHT-OF-WAY.
- 7) THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND FEES.
- 8) ALL WORK SHALL CONFORM TO STATE AND LOCAL CODES AND CONFORM TO THE CITY OF LEWISTON STANDARD DRAWINGS AND IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (ISPCW) EXCEPT AS OTHERWISE SPECIFIED OR APPROVED BY THE ENGINEER. ALL CONSTRUCTION NOT SPECIFICALLY MENTIONED OR SHOWN SHALL CONFORM TO CITY OF LEWISTON ORDINANCES AND STANDARDS.
- 9) UPON COMPLETION, CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS, COMPLETE WITH ELEVATIONS, TO THE ENGINEER OF RECORD.
- 10) THIS PROJECT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF ALL WORK. ANY DEFECTS IN MATERIAL OR WORKMANSHIP WITHIN THIS PERIOD SHALL BE IMMEDIATELY CORRECTED BY THE CONTRACTOR AT NO COST TO THE OWNER.

### SHEET INDEX

| GENERAL |                                     |
|---------|-------------------------------------|
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| C1.0    | EXISTING SITE & SURVEY CONTROL PLAN |
| C2.0    | DEMOLITION PLAN                     |
| C3.0    | SITE PLAN                           |
| C3.1    | SITE PLAN DETAILS                   |
| C4.0    | GRADING & DRAINAGE PLAN             |
| C4.1    | STORM DRAINAGE PLAN & PROFILE       |
| C4.2    | POND DETAILS                        |
| C4.3    | STORM DRAINAGE DETAILS              |
| C4.4    | RETAINING WALL PLAN                 |
| C5.0    | OVERALL UTILITY PLAN                |
| C5.1    | UTILITY DETAILS                     |
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| C6.0    | EROSION CONTROL PLAN                |
| C6.1    | EROSION CONTROL DETAILS             |



VICINITY MAP  
NOT TO SCALE



△ GENERAL SITE LOCATION

| ITEM   | MATERIAL  | TEST/STANDARD   | ACCEPTANCE  | TEST FREQUENCY   | INSPECTOR/CO.              | DATE          | INITIAL |
|--|---|---|---|--|----------------------------|---------------|---------|
| <b>1. ALL UTILITY TRENCHES &amp; STRUCTURES</b>        |   |   |   |  |                            |               |         |
| TRENCH SUBGRADE  | Native (6" to 8" Lifts Max.)  | Moisture Density Relationship of Soils (AASHTO T180)<br>In-place Density and Moisture Content (AASHTO 310 Method B)   | 90% Max. Dry Density  | One in-place density test every lift per 100 linear feet. If project is less than 100 linear feet, one in-place density test per day OR per lift (whichever test frequency is more restrictive).                           |                            |               |         |
| PIPE BEDDING   | 3/4" minus Crushed Aggregate (6" to 8" Max. Lift)<br>(Current ITD Spec 703.04) OR<br>5/8" minus Crushed Aggregate (6" to 8" Max. Lift)<br>(Current WDOT/M41-10 Spec 9-03.9) | Moisture Density Relationship of Soils (AASHTO T180)<br>In-place Density and Moisture Content (AASHTO 310 Method B)   | 95% Max. Dry Density  | One in-place density test every lift per 100 linear feet. If project is less than 100 linear feet, one in-place density test per day OR per lift (whichever test frequency is more restrictive). Test top 6" of 12" cover. |                            |               |         |
| 1st FOOT (12") OF FILL OVER PIPE                       | 3/4" minus Crushed Aggregate (6" to 8" Max. Lift)<br>(Current ITD Spec 703.04) OR<br>5/8" minus Crushed Aggregate (6" to 8" Max. Lift)<br>(Current WDOT/M41-10 Spec 9-03.9) | Moisture Density Relationship of Soils (AASHTO T180)<br>In-place Density and Moisture Content (AASHTO 310 Method B)   | 95% Max. Dry Density  | One in-place density test every lift per 100 linear feet. If project is less than 100 linear feet, one in-place density test per day OR per lift (whichever test frequency is more restrictive).                           |                            |               |         |
| TRENCH BACKFILL UNDER PROPOSED ROAD & SIDEWALK         | 3/4" minus Crushed Aggregate (6" to 8" Max. Lift)<br>(Current ITD Spec 703.04) OR<br>5/8" minus Crushed Aggregate (6" to 8" Max. Lift)<br>(Current WDOT/M41-10 Spec 9-03.9) | Moisture Density Relationship of Soils (AASHTO T180)<br>In-place Density and Moisture Content (AASHTO 310 Method B)   | 95% Max. Dry Density  | One in-place density test every lift per 100 linear feet. If project is less than 100 linear feet, one in-place density test per day OR per lift (whichever test frequency is more restrictive).                           |                            |               |         |
| TRENCH BACKFILL UNDER EASEMENT/<br>NON-TRAFFICKED AREA | Native Soil Free of Unsuitable Material w/4" Max. Particle Size (8" Max. Lift)  | Moisture Density Relationship of Soils (AASHTO T180)<br>In-place Density and Moisture Content (AASHTO 310 Method B)   | 90% Max. Dry Density  | One in-place density test every lift per 100 linear feet. If project is less than 100 linear feet, one in-place density test per day OR per lift (whichever test frequency is more restrictive).                           |                            |               |         |
| <b>STRUCTURAL FILLS</b>                                |   |   |   |  |                            |               |         |
|  | As Spec'd by Engineer   | As Spec'd by Engineer   |   | As Spec'd by Engineer  |                            |               |         |
| <b>2. STORM DRAIN MAINS</b>                            |   |   |   |  |                            |               |         |
| GASKETED PE Storm Sewer Pipe ALIGNMENT AND GRADE       | Polyethylene, ADS N-12 or Equal   | N/A   | Certified & Visual by City  | Per Plan   | Certified & Visual by City |               |         |
| JOINTS (Deflection/Proper Pipe Embedment)              | N/A   | Per Manufacturer's Instructions   |   | Each Joint   |                            |               |         |
| PRESSURE TEST  | N/A   | 4 PSI for 15 Minutes, 1/2 PSI Drop  | If required by City Engineer  | Between Access Holes   |                            |               |         |
| MANHOLES   | Concrete  | City Standard   |   | N/A  | Certified & Visual by City |               |         |
| VIDEO INSPECTION                                       | N/A   |   | Public Works Policy No. 2012-2  |  |                            |               |         |
| <b>3. WATER MAINS</b>                                  |   |   |   |  |                            |               |         |
| DUCTILE IRON or PVC WATER MAIN ALIGNMENT AND GRADE     | AWWA C-151, C-900, C-905 (Class as Req'd)   | AWWA C-600, AWWA C-605<br>AWWA C-600, AWWA C-605  | Certified & Visual by City  | Per Plan<br>Each Joint   | Certified & Visual by City |               |         |
| JOINTS (Deflection/Proper Pipe Embedment)              | N/A   | Per Approved Plans/or City Std Dwg #4-4   |   | Each Joint   | Certified & Visual by City |               |         |
| THRUST BLOCKS  | Concrete, 2500 PSI Mix  |   |   | 150% Working Pressure OR<br>1 1/2 times the Working Pressure in the Water System   |                            |               |         |
| HYDROSTATIC PRESSURE                                   | N/A   | 2 Hrs, NTE Allowable Leakage per AWWA C-600, AWWA C-605   |   | Bacterial Testing: two negative testing samples 24 hours apart   | City of Lewiston           |               |         |
| CHLORINATION/BACTERIA                                  | N/A   | AWWA C-651  |   |  |                            |               |         |
| <b>4. WASTEWATER MAINS</b>                             |   |   |   |  |                            |               |         |
| PVC WASTEWATER MAIN ALIGNMENT AND GRADE                | PVC, SDR 35   | ASTM 3034   |   | N/A  |                            |               |         |
| JOINTS (Deflection/Proper Pipe Embedment)              | N/A   | Per Manufacturer's Instructions   |   | Each Joint   |                            |               |         |
| MANHOLES   | Concrete  | Hydrostatic Test  |   | Each Joint   |                            |               |         |
| PRESSURE TEST  | N/A   | 4 PSI for 15 Minutes, 1/2 PSI Drop  |   | Between Access Holes   |                            |               |         |
| VIDEO INSPECTION                                       | N/A   | No Perforations, Dents or Dimples, No Bellies >0.2"   | Public Works Policy No 2012-2   | Between Access Holes   |                            |               |         |
| <b>5. CONCRETE CURB, GUTTER &amp; SIDEWALK</b>         |   |   |   |  |                            |               |         |
| CONCRETE   | CLASS 35B - Approved Mix Design Required with Min. Cement Content of 560 Lb/CY, Max Water/Cement Ratio of .44, a WRA, and and AEA   | AASHTO T-22 Compressive Strength of Concrete<br>AASHTO T-23 Making Test Specimens<br>AASHTO T-119 Slump of Hydraulic Cement Concrete<br>AASHTO T-152 Air Content of Freshly Mixed Concrete<br>ASTM C-138 Temperature of Freshly Mixed Concrete<br>WQTC TM-2 Sampling Freshly Mixed Concrete | Min. 28 day Compressive Strength= 3000 psi; Water/Cement Ratio shall be 0.5lb/lb<br>Max. Slump=5 inches<br>Air Content Percent=6.0% ±1.5<br>Temperature=50°F-80°F | 1 of Each Test Minimum Per Day<br>OR<br>1 of Each Test per 50 CY   |                            |               |         |
| CRUSHED AGGREGATE BASE COURSE                          | 3/4" minus Crushed Aggregate (4" Max. Lift)<br>(Current ITD Spec 703.04) OR<br>5/8" minus Crushed Aggregate (4" Max. Lift)<br>(Current WDOT/M41-10 Spec 9-03.9)             | Moisture Density Relationship of Soils (AASHTO T180)<br>In-place Density and Moisture Content (AASHTO 310 Method B)   | 95% Max. Dry Density  | 1 Test per 500 LF--Min 2 Tests   |                            |               |         |
| ALIGNMENT AND GRADE                                    | N/A   | Visual  |   | +0.2" from Design Grade/Alignment  | Per 10' Section            | City Approval |         |
| JOINTS/FLATNESS/STRAIGHTNESS                           | N/A   | Visual  |   | +0.2" /10' Segment   | Per 10' Section            |               |         |
| FINISH   | N/A   | Visual  |   | Floated, Uniform, Light Broom Finish   | Entire Surface Area        |               |         |
| <b>6. ASPHALTIC CONCRETE PAVING</b>                    |   |   |   |  |                            |               |         |
| HOT MIX ASPHALT  | ITD Class II 1/2" - App'd Mix Design Required (2004 ITD Spec 405, 702, and 703.05)  | AASHTO T-166, Method C, Specific Gravity of HMA<br>AASHTO T-209, Test for Maximum Specific Gravity<br>WQTC TM-8, In-Place Density of Bituminous Mixes   | 92%-95% Max. Theoretical Density  | 1 Test per 750 Ton--Min 1 Test   |                            |               |         |
| CRUSHED AGGREGATE BASE COURSE                          | Same test requirement as under 5. Concrete, Curb Gutter & Sidewalk  |   |   |  |                            |               |         |
| <b>7. EROSION &amp; SEDIMENT CONTROLS</b>              |   |   |   |  |                            |               |         |
|  | Per Approved Plan   | Per Plan and Manufacturer's Instructions  |   | 1/Wk or After Every Rainfall   |                            |               |         |
| <b>8. TRAFFIC CONTROL</b>                              |   |   |   |  |                            |               |         |
|  | Per Approved Plan   | Current Adopted MUTCD/ATSSA   |   | Continuous   |                            |               |         |
| <b>9. RECORD DRAWINGS</b>                              |   |   |   |  |                            |               |         |
| ENGINEER'S CERTIFICATION                               | AutoCAD Elect File, Bond Paper, 22"x34" Min Size  | City Checklist  |   | Before Public Improvements Accepted  |                            |               |         |
| DATE LAST REVISED: SEPTEMBER 2015                      |   |   |   |  |                            |               |         |

### SCHEDULE OF ABBREVIATIONS

| ABBREVIATION | DESCRIPTION                               |
|--------------|---|
| ADA          | AMERICANS WITH DISABILITIES ACT           |
| APPROX.      | APPROXIMATE                               |
| ASTM         | AMERICAN SOCIETY FOR TESTING & MATERIALS  |
| AVE.         | AVENUE                                    |
| BMP          | BEST MANAGEMENT PRACTICES                 |
| BW           | BOTTOM (FACE OF) WALL                     |
| CLM          | CENTERLINE MONUMENT                       |
| CONC.        | CONCRETE                                  |
| CP           | CONTROL POINT                             |
| DWG.         | DRAWING                                   |
| ELEV.        | ELEVATION                                 |
| EXIST.       | (EX) EXISTING                             |
| F.F.         | FINISH FLOOR                              |
| FG           | FINISHED GRADE                            |
| FL           | FLOWLINE                                  |
| FT.          | FEET                                      |
| INV.         | INVERT                                    |
| L            | LENGTH                                    |
| L.F.         | LINEAR FEET                               |
| MAX.         | MAXIMUM                                   |
| MIN.         | MINIMUM                                   |
| MH           | MANHOLE                                   |
| MUTCD        | MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES |
| NO.          | NUMBER                                    |
| O.C.         | ON CENTER                                 |
| P.I.V.       | POST INDICATOR VALVE                      |
| PVC          | POLYVINYLCHLORIDE                         |
| PVIE         | POINT OF VERTICAL INTERSECTION ELEVATION  |
| PIVS         | POINT OF VERTICAL INTERSECTION STATION    |
| PROP.        | PROPOSED                                  |
| NO.          | NUMBER                                    |
| P/L          | PROPERTY LINE                             |
| RAD          | RADIUS                                    |
| RT.          | RIGHT                                     |
| R/W          | RIGHT OF WAY                              |
| S            | SLOPE                                     |
| S.D.         | STORM DRAIN                               |
| STA.         | STATION                                   |
| STD.         | STANDARD                                  |
| TA           | TOP OF ASPHALT                            |
| TC           | TOP OF CURB                               |
| TW           | TOP (BACK OF) WALL                        |
| TYP.         | TYPICAL                                   |

### LEGEND

| PROPOSED | EXISTING | DESCRIPTION              |
|----------|----------|--------------------------|
| [Symbol] | [Symbol] | ASPHALT                  |
| [Symbol] | [Symbol] | ASPHALT (EDGE OF)        |
| [Symbol] | [Symbol] | BUILDING                 |
| [Symbol] | [Symbol] | CATCH BASIN              |
| [Symbol] | [Symbol] | CLEANOUT                 |
| [Symbol] | [Symbol] | CONCRETE                 |
| [Symbol] | [Symbol] | CONTOUR                  |
| [Symbol] | [Symbol] | CONTROL POINT            |
| [Symbol] | [Symbol] | CURB (STRAIGHT)          |
| [Symbol] | [Symbol] | ELECTRICAL (UNDERGROUND) |
| [Symbol] | [Symbol] | ELECTRICAL BOX           |
| [Symbol] | [Symbol] | FIRE HYDRANT             |
| [Symbol] | [Symbol] | GAS LINE                 |
| [Symbol] | [Symbol] | GRAVEL                   |
| [Symbol] | [Symbol] | GRAVEL EDGE OF           |
| [Symbol] | [Symbol] | GUY WIRE                 |
| [Symbol] | [Symbol] | LIGHT POLE               |
| [Symbol] | [Symbol] | MANHOLE                  |
| [Symbol] | [Symbol] | MONUMENT                 |
| [Symbol] | [Symbol] | OIL/WATER SEPARATOR      |
| [Symbol] | [Symbol] | POWER POLE               |
| [Symbol] | [Symbol] | PROPERTY LINE            |
| [Symbol] | [Symbol] | RIGHT-OF-WAY LINE        |
| [Symbol] | [Symbol] | EASEMENT LINE            |
| [Symbol] | [Symbol] | RETAINING WALL           |
| [Symbol] | [Symbol] | SPOT ELEVATIONS          |
| [Symbol] | [Symbol] | STORMRAIN PIPE           |
| [Symbol] | [Symbol] | TELEPHONE LINE           |
| [Symbol] | [Symbol] | TELEPHONE RISER          |
| [Symbol] | [Symbol] | TEST PIT                 |
| [Symbol] | [Symbol] | TRAFFIC SIGN             |
| [Symbol] | [Symbol] | TREE - CONIFEROUS        |
| [Symbol] | [Symbol] | TREE - DECIDUOUS         |
| [Symbol] | [Symbol] | WATER LINE               |
| [Symbol] | [Symbol] | WATER METER              |
| [Symbol] | [Symbol] | VALVE                    |

### UTILITY LOCATION

THE LOCATIONS OF UNDERGROUND UTILITIES REPRESENTED ON THIS DRAWING HAVE BEEN DETERMINED FROM A FIELD SURVEY AND FROM RECORDS OBTAINED FROM THE VARIOUS UTILITY COMPANIES. THE NUMBER AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. FOR YOUR SAFETY, STATE LAW REQUIRES THAT YOU CALL THE LOCAL "ONE-CALL" UNDERGROUND UTILITY LOCATING CENTER AT LEAST TWO WORKING DAYS BEFORE BEGINNING ANY EXCAVATION: 1-800-342-1585



"CALL BEFORE YOU DIG"

**nbw architects p.a.**  
ARCHITECTURE 7 PLANNING 7 INTERIORS  
SCOTT L. NIELSON, A.I.A. KEVIN R. BOOBY, A.I.A. JAMES H. WYATT, A.I.A.  
960 JOHN ADAMS PARKWAY, P.O. BOX 2212 - IDAHO FALLS, IDAHO 83402-2212  
(P) 208-522-8779 (F) 208-522-8785 (W) nbwarchitects.com

**KENWORTH SALES COMPANY, INC.**  
1643 OLD SPIRAL HIGHWAY  
LEWISTON, IDAHO

PROJECT: ADDITION & RENOVATION  
NO. 004  
DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
DRAWING NO.:  
SHEET TITLE: COVER SHEET

REVISIONS  
CITY REVIEW COMMENTS 11/18/15

PROJECT: 004  
NO. 004  
DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
DRAWING NO.:  
SHEET TITLE: COVER SHEET

**C0.0**

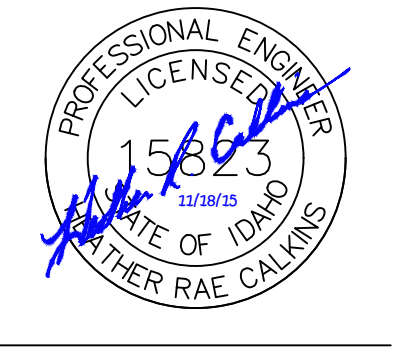
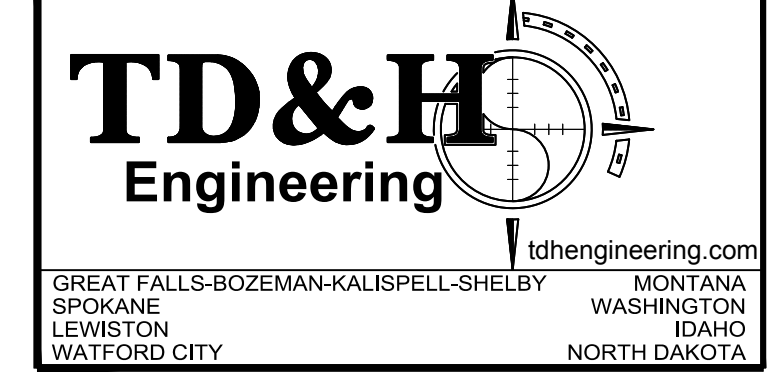


RECORD DRAWINGS  
APPROVED

NAME TITLE DATE



THESE RECORD DRAWINGS WERE PREPARED  
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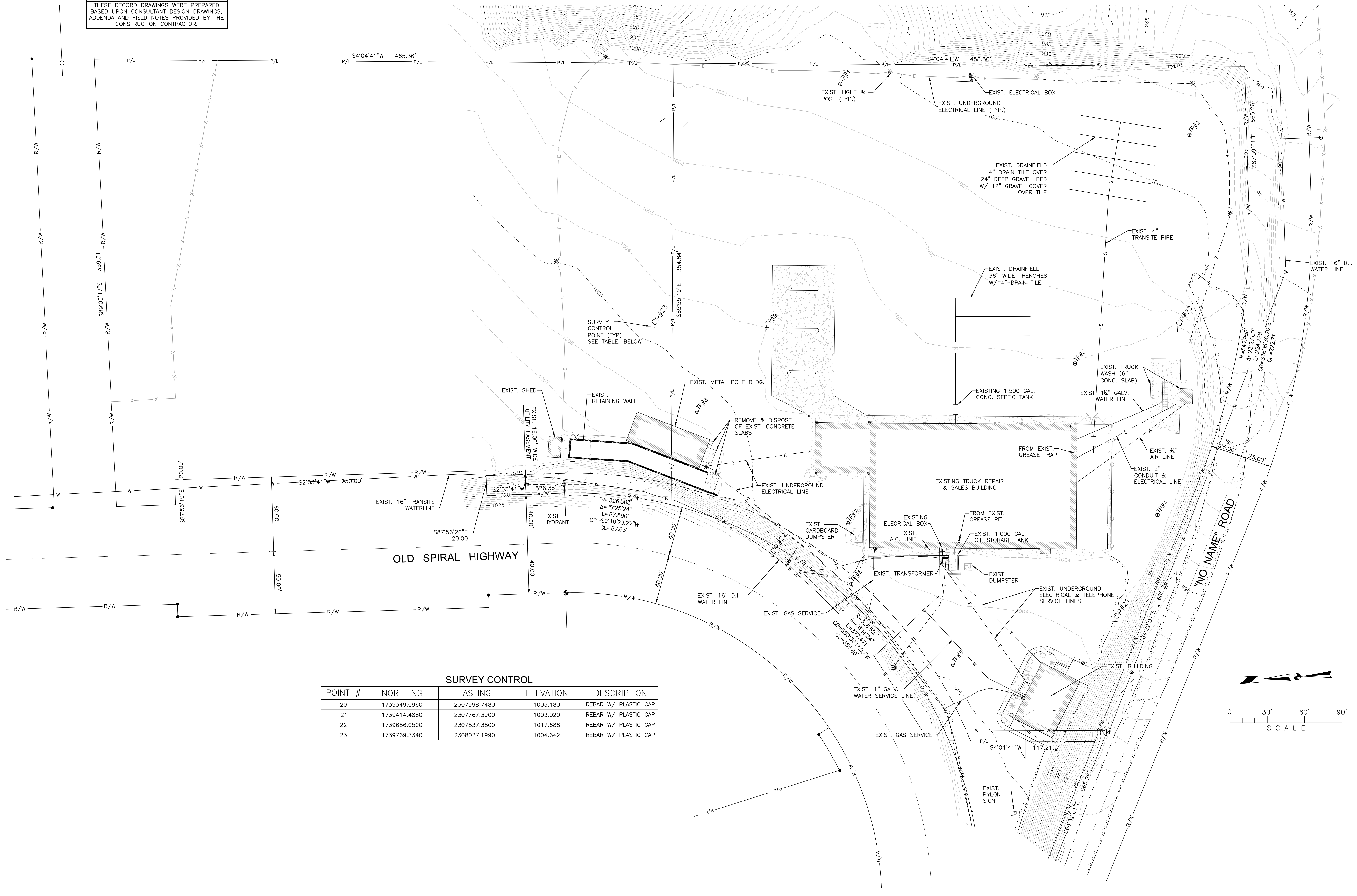


**rbw architects p.a.**  
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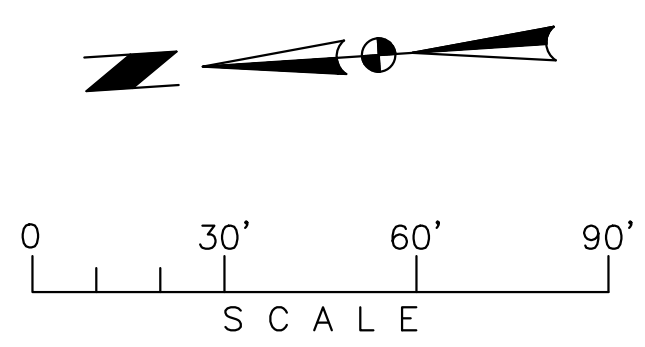
**KENWORTH SALES COMPANY, INC.**  
1643 OLD SPIRAL HIGHWAY  
LEWISTON, IDAHO  
**EXISTING SITE & SURVEY CONTROL PLAN**

PROJECT: 1004  
NO. 044  
DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
DRAWING NO.:  
SHEET TITLE:

**C1.0**



| POINT # | NORTHING     | EASTING      | ELEVATION | DESCRIPTION          |
|---------|--------------|--------------|-----------|----------------------|
| 20      | 1739349.0960 | 2307998.7480 | 1003.180  | REBAR W/ PLASTIC CAP |
| 21      | 1739414.4880 | 2307767.3900 | 1003.020  | REBAR W/ PLASTIC CAP |
| 22      | 1739686.0500 | 2307837.3800 | 1017.688  | REBAR W/ PLASTIC CAP |
| 23      | 1739769.3340 | 2308027.1990 | 1004.642  | REBAR W/ PLASTIC CAP |





**RECORD DRAWINGS**  
APPROVED

NAME: *Alan* ENGINEERING MANAGER 03/27/18  
TITLE: DATE:

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Engineering

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GREAT FALLS-BOZEMAN-KALISPELL-SHELBY MONTANA  
SPOKANE WASHINGTON  
LEWISTON IDAHO  
WATFORD CITY NORTH DAKOTA

PROFESSIONAL ENGINEER  
LICENSE NO. 15865  
STATE OF IDAHO  
ALTER RAE CALVO

**rbw architects p.a.**  
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**KENWORTH SALES COMPANY, INC.**  
1643 OLD SPIRAL HIGHWAY  
LEWISTON, IDAHO  
DEMOLITION PLAN

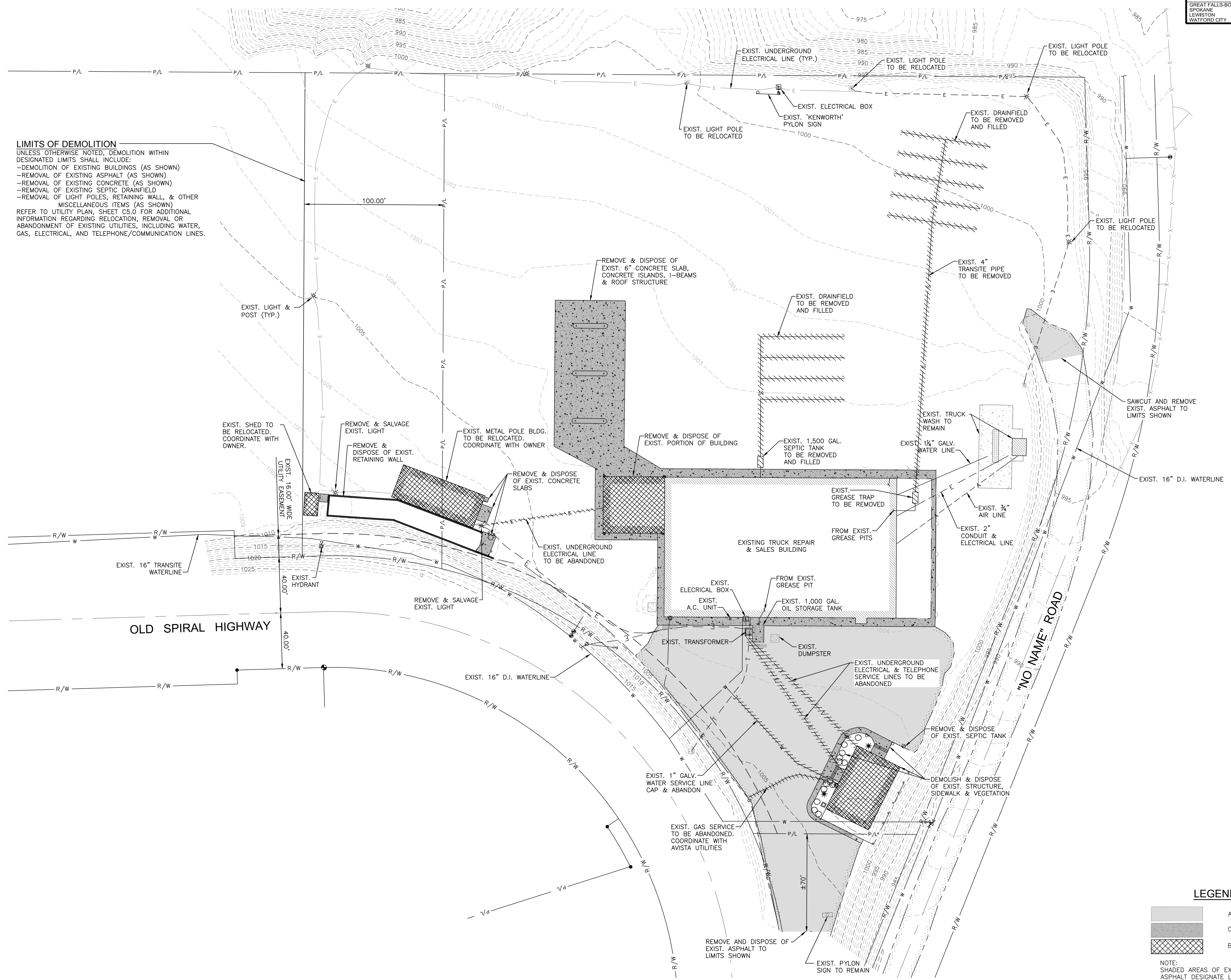
PROJECT:  
SHEET TITLE:

REVISIONS

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PROJECT: 0044  
NO. 09-10-15  
DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
BY:

DRAWING NO.:  
**C2.0**

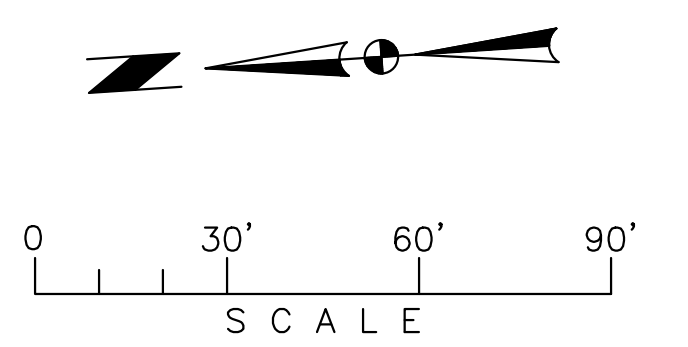


**LIMITS OF DEMOLITION**  
UNLESS OTHERWISE NOTED, DEMOLITION WITHIN DESIGNATED LIMITS SHALL INCLUDE:  
-DEMOLITION OF EXISTING BUILDINGS (AS SHOWN)  
-REMOVAL OF EXISTING ASPHALT (AS SHOWN)  
-REMOVAL OF EXISTING CONCRETE (AS SHOWN)  
-REMOVAL OF EXISTING SEPTIC DRAINFIELD  
-REMOVAL OF LIGHT POLES, RETAINING WALL, & OTHER MISCELLANEOUS ITEMS (AS SHOWN)  
REFER TO UTILITY PLAN, SHEET C5.0 FOR ADDITIONAL INFORMATION REGARDING RELOCATION, REMOVAL OR ABANDONMENT OF EXISTING UTILITIES, INCLUDING WATER, GAS, ELECTRICAL, AND TELEPHONE/COMMUNICATION LINES.

**LEGEND**

- ASPHALT PAVEMENT REMOVAL
- CONCRETE SIDEWALK REMOVAL
- BUILDING DEMOLITION

NOTE: SHADED AREAS OF EXISTING CONCRETE AND ASPHALT DESIGNATE LIMITS OF REMOVAL.





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TITLE: DATE:

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PROFESSIONAL ENGINEER  
LICENSE NO. 15865  
STATE OF IDAHO  
ALTER RAE CALVO

**inbw architects p.a.**  
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**KENWORTH SALES COMPANY, INC.**  
1643 OLD SPIRAL HIGHWAY  
LEWISTON, IDAHO

PROJECT:  
SHEET TITLE:

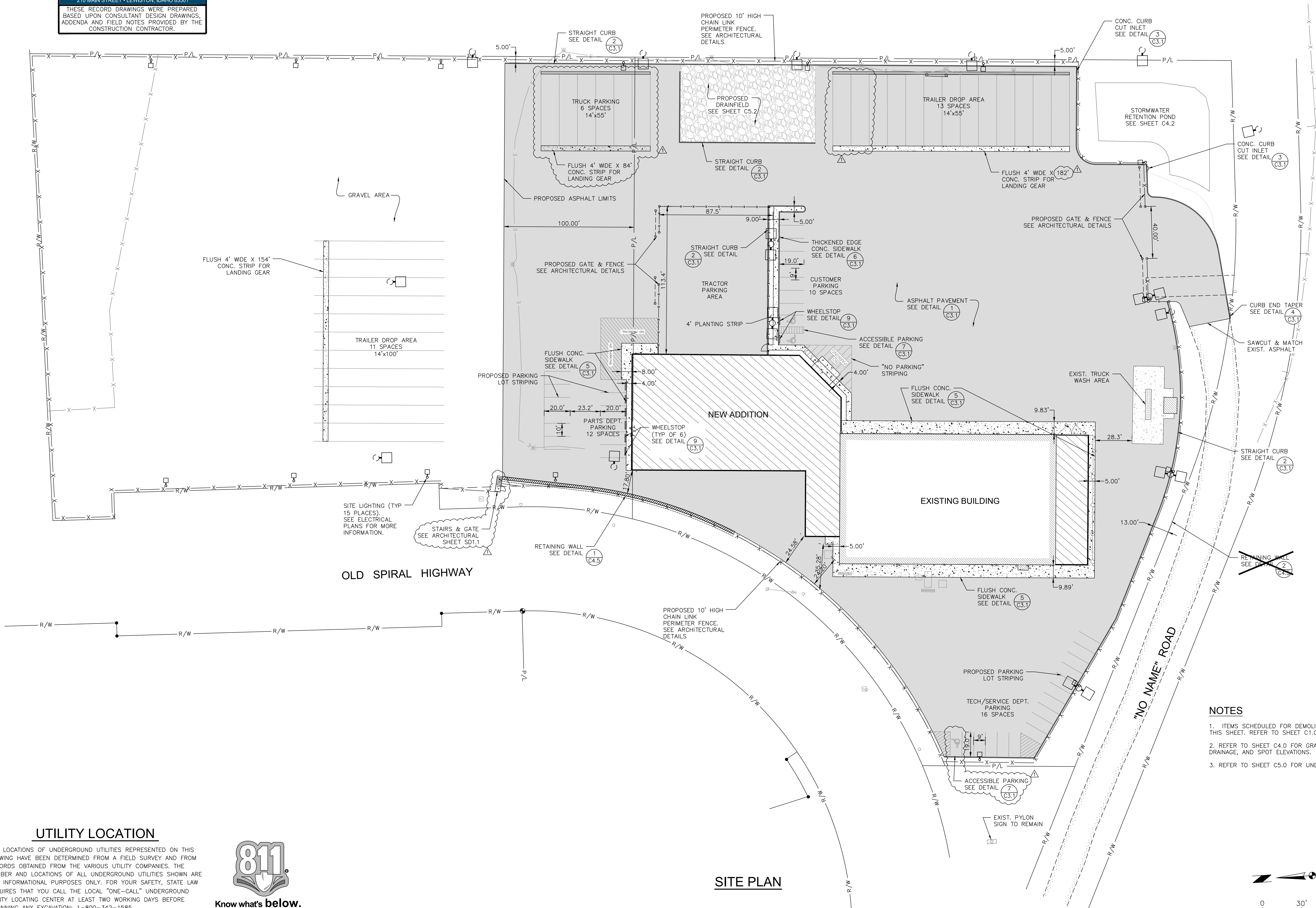
REVISIONS

| NO. | DATE     | DESCRIPTION          |
|-----|----------|----------------------|
| 1   | 11/18/15 | CITY REVIEW COMMENTS |

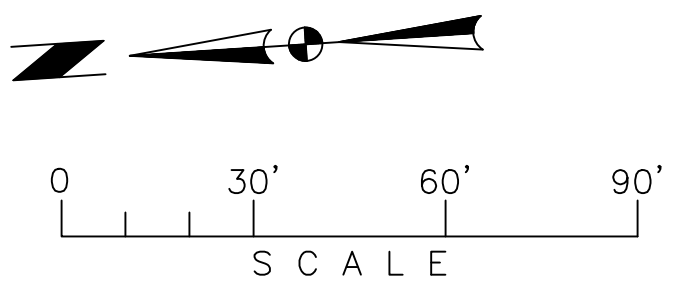
PROJECT: 0044  
NO. 09-10-15  
DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC

DRAWING NO.:

**C3.0**



- NOTES**
- ITEMS SCHEDULED FOR DEMOLITION ARE NOT SHOWN ON THIS SHEET. REFER TO SHEET C1.0 FOR DEMOLITION WORK.
  - REFER TO SHEET C4.0 FOR GRADING, STORMWATER DRAINAGE, AND SPOT ELEVATIONS.
  - REFER TO SHEET C5.0 FOR UNDERGROUND UTILITY WORK.



**UTILITY LOCATION**

THE LOCATIONS OF UNDERGROUND UTILITIES REPRESENTED ON THIS DRAWING HAVE BEEN DETERMINED FROM A FIELD SURVEY AND FROM RECORDS OBTAINED FROM THE VARIOUS UTILITY COMPANIES. THE NUMBER AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. FOR YOUR SAFETY, STATE LAW REQUIRES THAT YOU CALL THE LOCAL "ONE-CALL" UNDERGROUND UTILITY LOCATING CENTER AT LEAST TWO WORKING DAYS BEFORE BEGINNING ANY EXCAVATION: 1-800-342-1585

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**SITE PLAN**



**RECORD DRAWINGS**  
APPROVED

NAME: *[Signature]* ENGINEERING MANAGER 03/27/18  
TITLE: DATE:

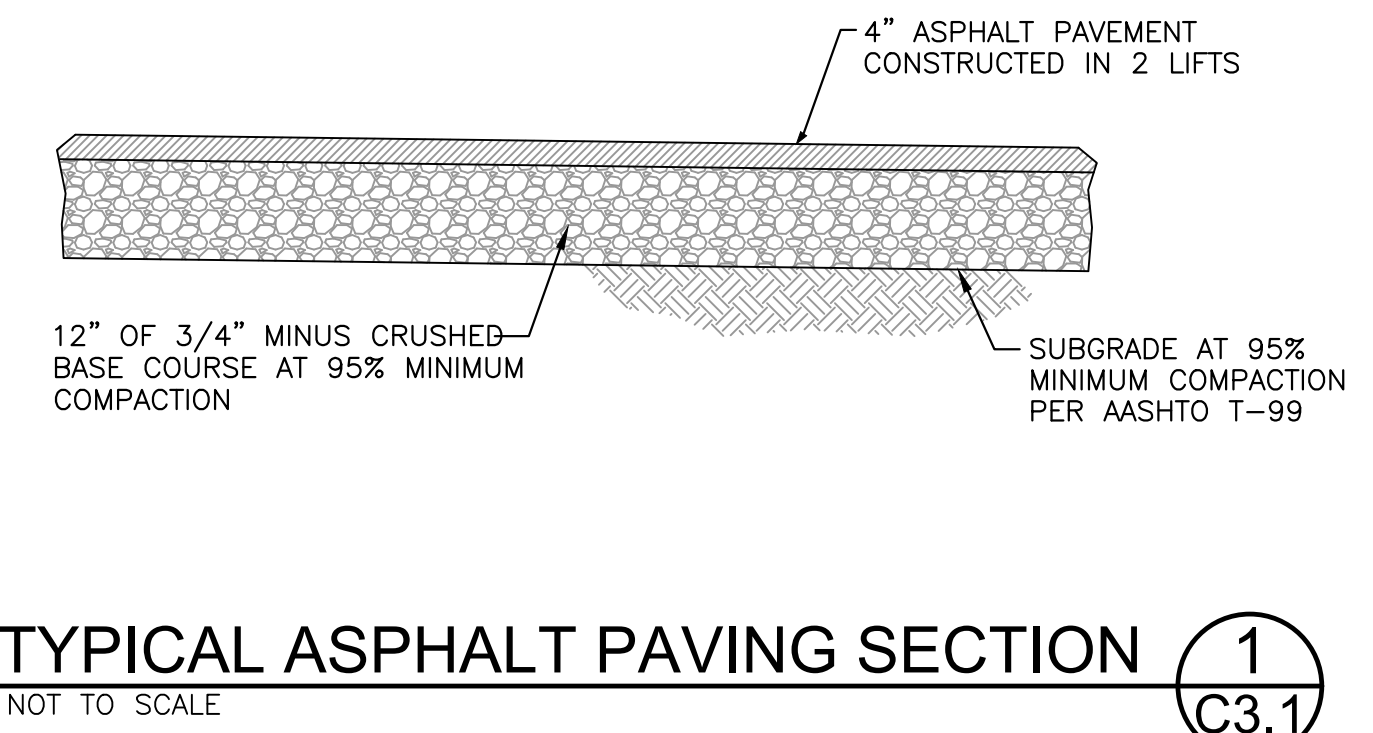
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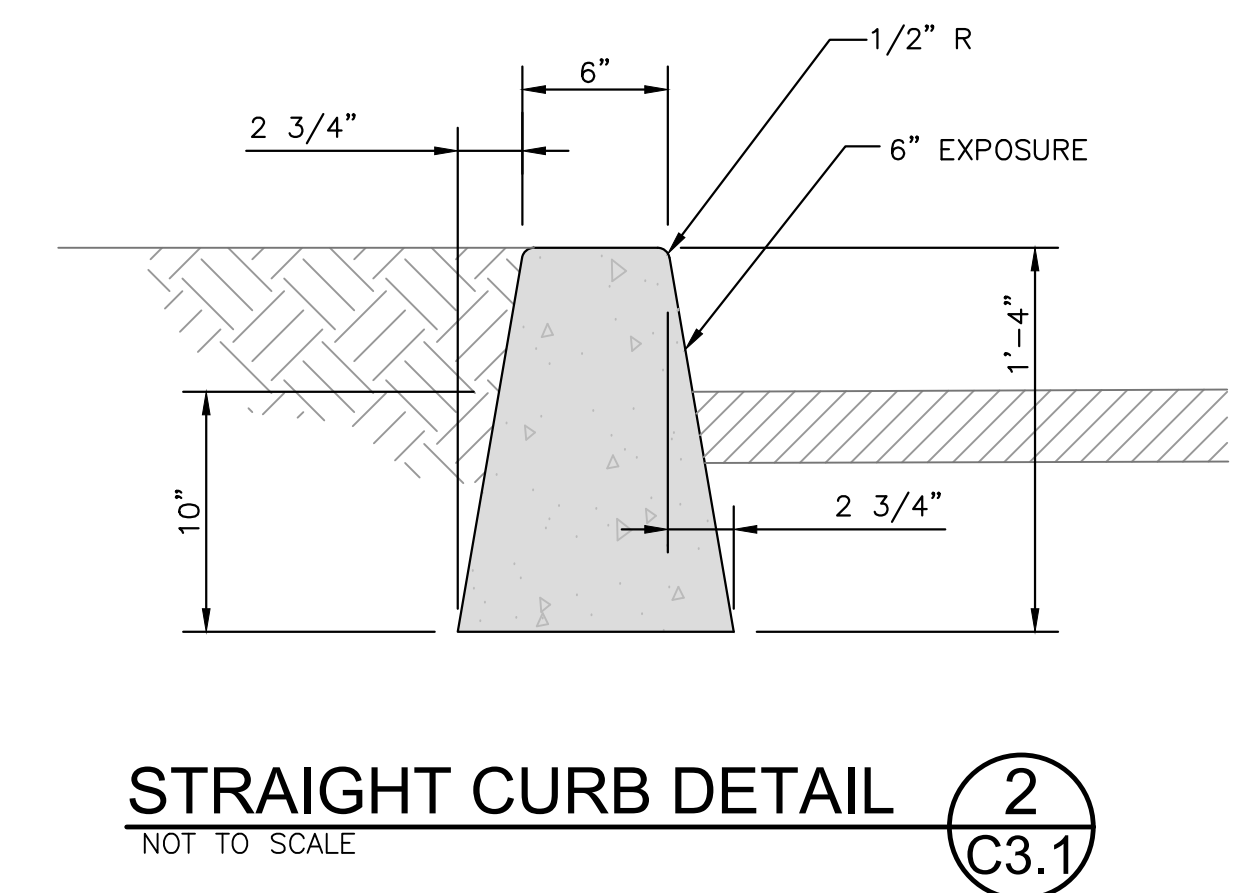
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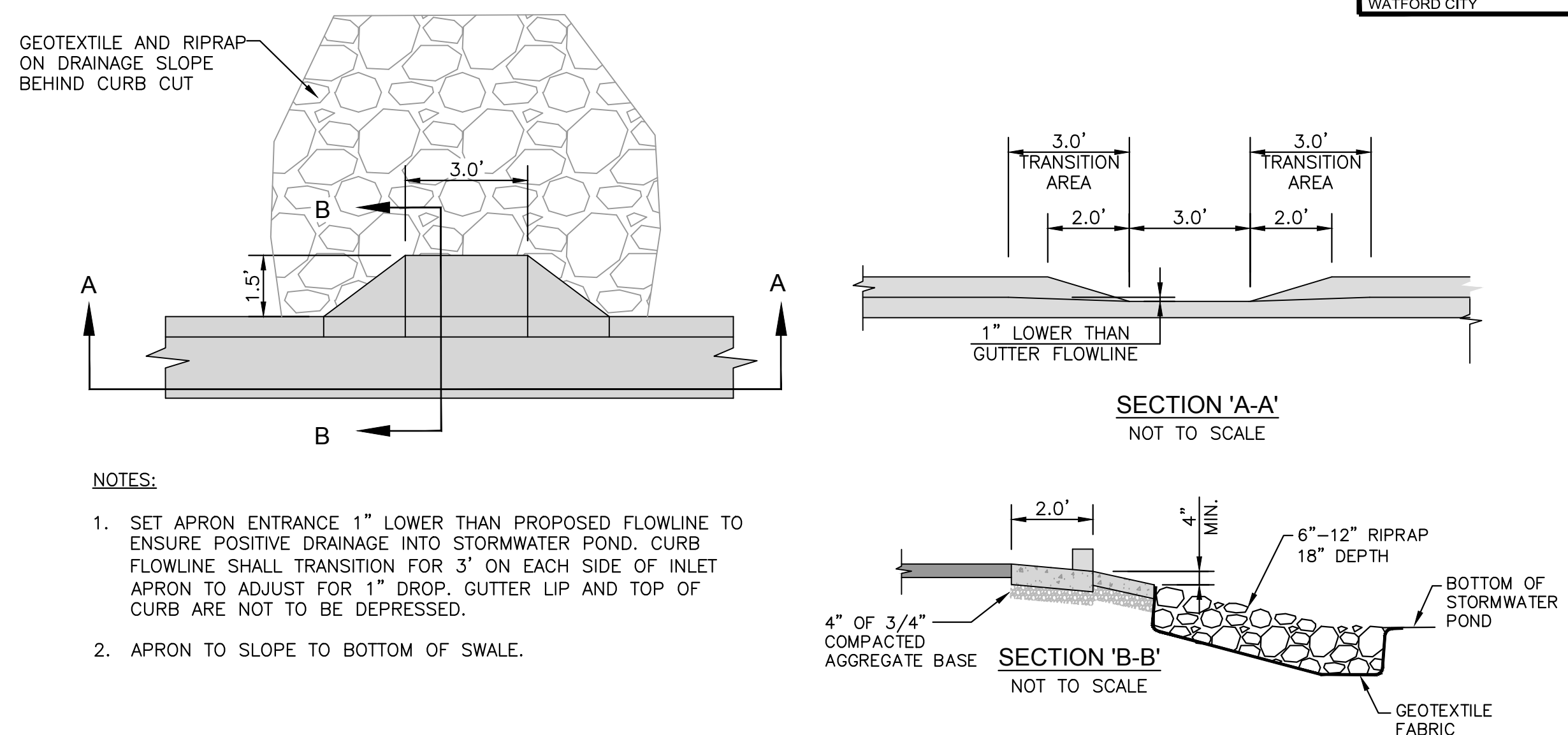


**TYPICAL ASPHALT PAVING SECTION 1**  
NOT TO SCALE C3.1



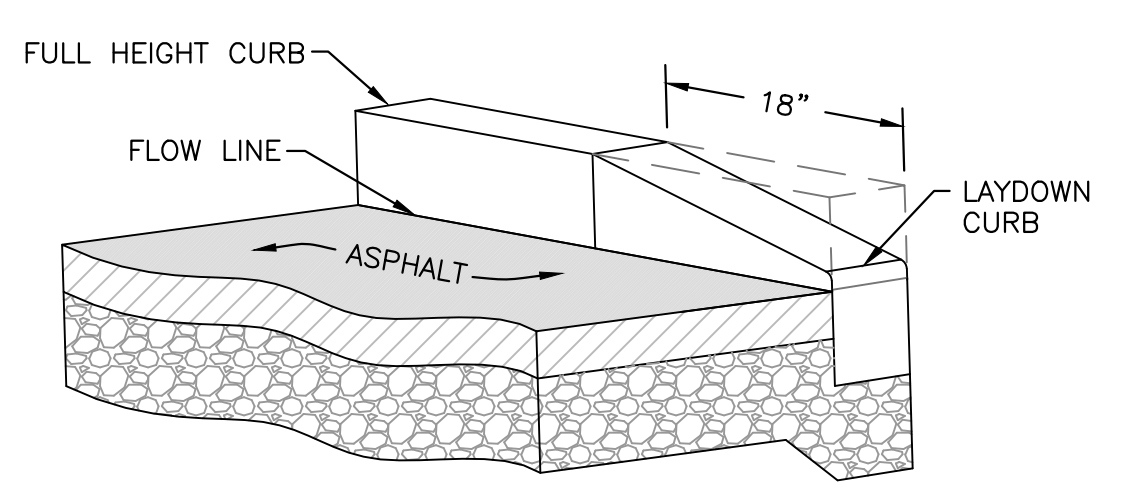
**STRAIGHT CURB DETAIL 2**  
NOT TO SCALE C3.1

- CURB NOTES:**
1. THE TOLERANCE FOR FINISHED CURB - MAX. VARIATION OF SURFACE FLATNESS: 1/8 INCH IN 10 FEET MAX. VARIATION FROM TRUE POSITION (DESIGN GRADE): 1/2 INCH
  2. BASE MATERIAL SHALL BE 4" OF 3/4" INCH MINUS CRUSHED AGGREGATE VASE MATERIAL COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY MODIFIED PROCTOR AS PER AASHTO T180. ALL FILL OR BACKFILL AREAS SHALL BE PLACED IN 6" TO 8" MAXIMUM LIFTS.
  3. CONCRETE SHALL BE 3,000 PSI MINIMUM AT 28 DAYS, MAXIMUM WATER/CEMENT RATIO SHALL BE 0.5 (LB/LB), 5" MAX. SLUMP, AIR CONTENT (%) 6.5 ±1.5.
  4. DUMMY JOINTS AT 10 FOOT INTERVALS AND AT CURB RADII, 3/4" TO 1" DIFFERENTIAL ELEVATION BETWEEN ADJACENT SECTIONS SHALL NOT EXCEED 1/4".

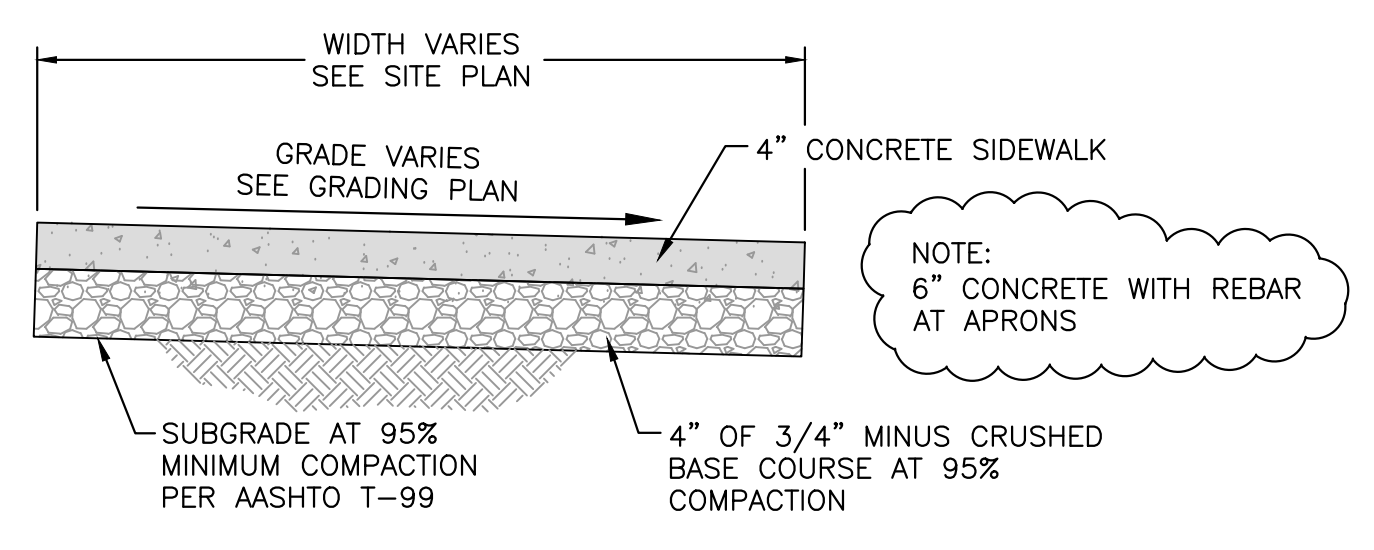


- NOTES:**
1. SET APRON ENTRANCE 1" LOWER THAN PROPOSED FLOWLINE TO ENSURE POSITIVE DRAINAGE INTO STORMWATER POND. CURB FLOWLINE SHALL TRANSITION FOR 3' ON EACH SIDE OF INLET APRON TO ADJUST FOR 1" DROP. GUTTER LIP AND TOP OF CURB ARE NOT TO BE DEPRESSED.
  2. APRON TO SLOPE TO BOTTOM OF SWALE.

**CURB CUT DETAIL 3**  
NOT TO SCALE C3.1

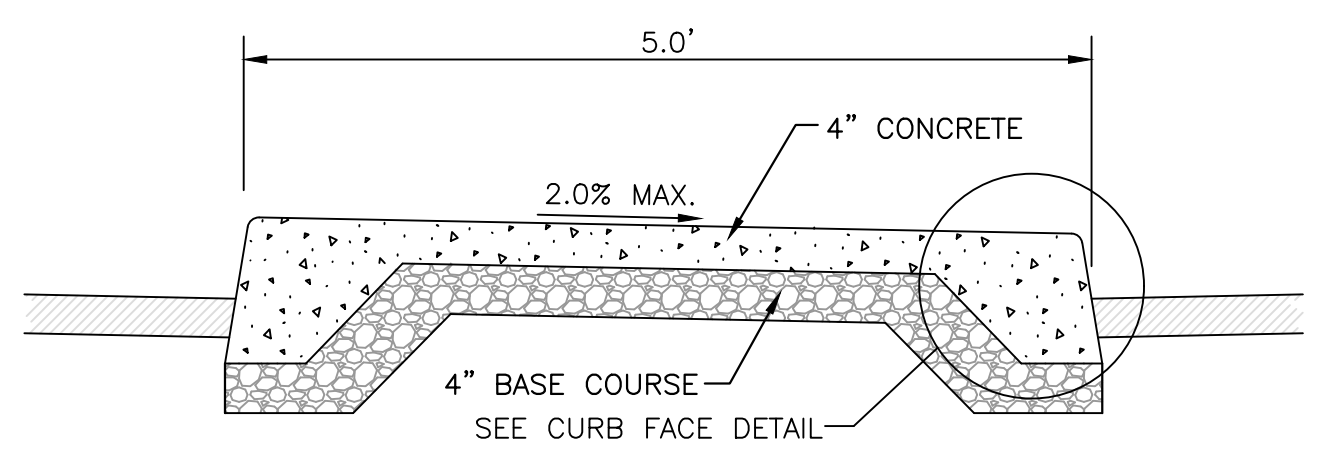


**CURB END TAPER DETAIL 4**  
NOT TO SCALE C3.1

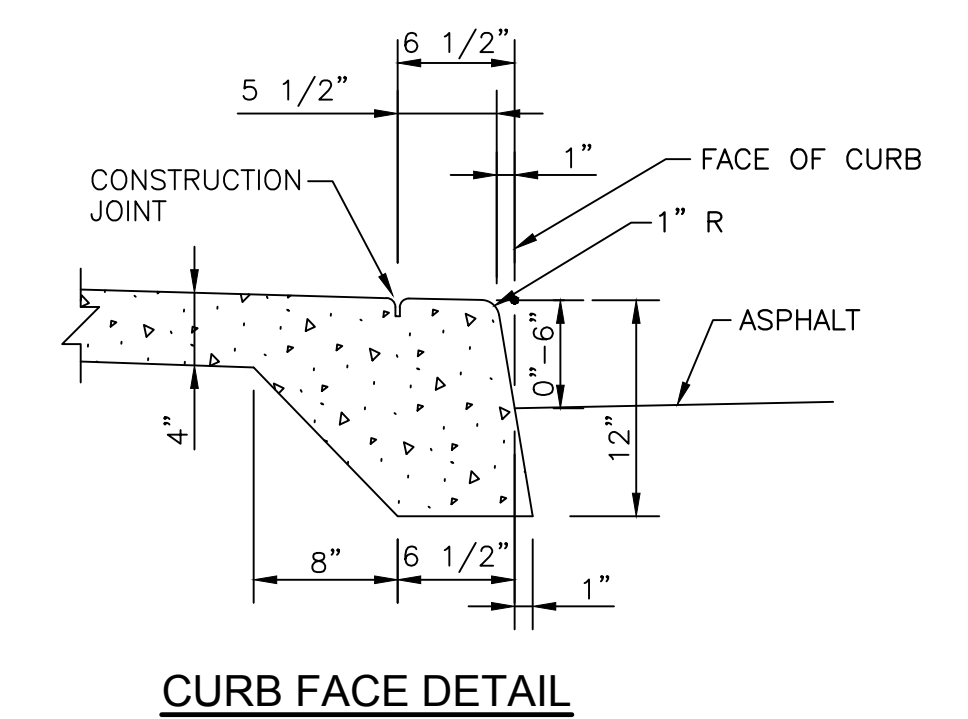


**4" CONCRETE SIDEWALK SECTION 5**  
NOT TO SCALE C3.1

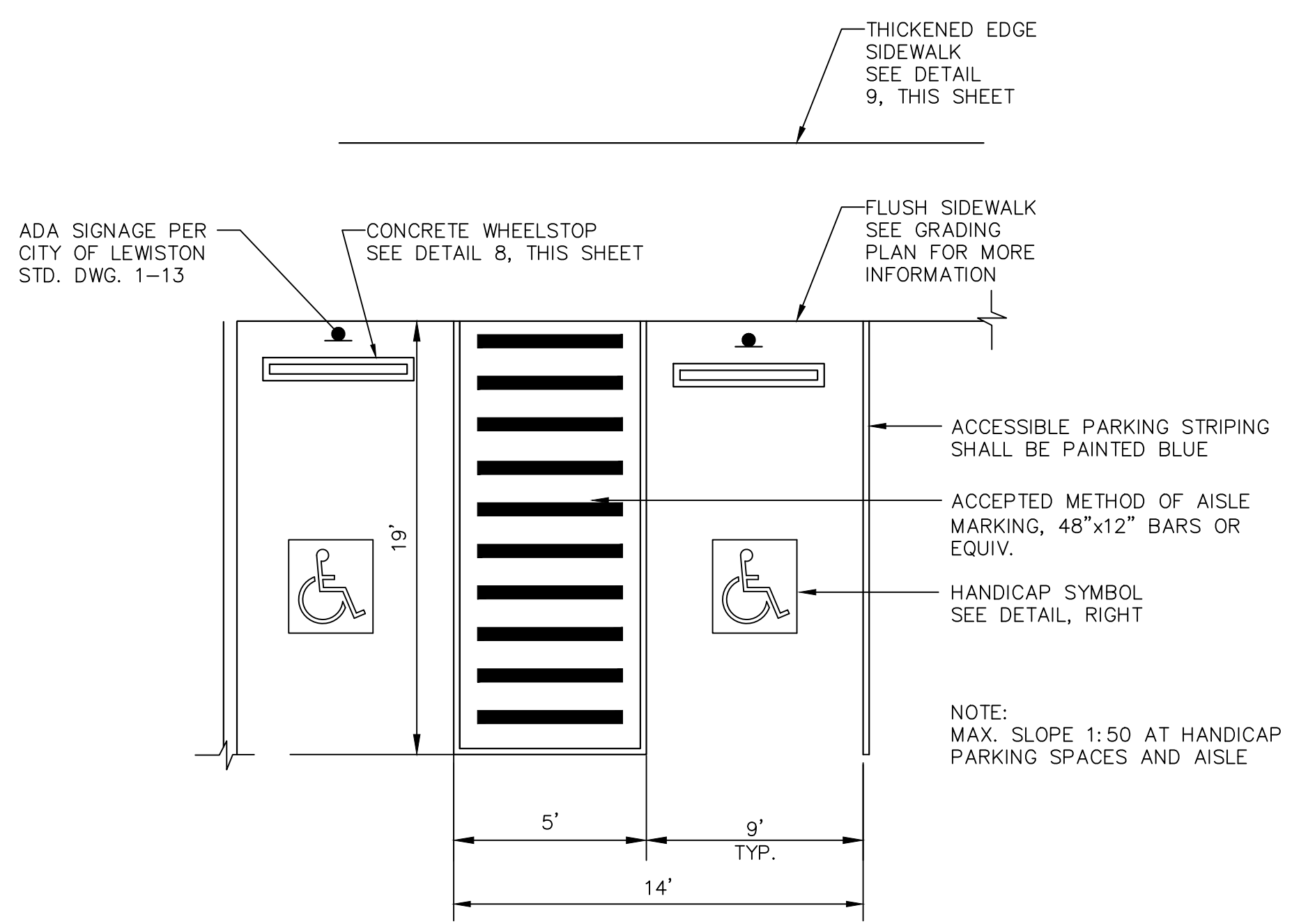
- SIDEWALK NOTES:**
1. THE TOLERANCE FOR FINISHED SIDEWALK - MAX. VARIATION OF SURFACE FLATNESS: 1/8 INCH IN 10 FEET MAX. VARIATION FROM TRUE POSITION (DESIGN GRADE): 1/2 INCH
  2. BASE MATERIAL SHALL BE 4" OF 3/4" INCH MINUS CRUSHED AGGREGATE BASE MATERIAL COMPACTED TO 95% MAX. DENSITY AS DETERMINED BY MODIFIED PROCTOR AS PER AASHTO T180. ALL FILLS OR BACKFILL AREAS SHALL BE PLACED IN 6" MAX. LIFTS.
  3. DUMMY JOINTS SHALL BE PLACED AT 5' INTERVALS, 3/4" TO 1" DEEP.
  4. CONCRETE SHALL BE 3,000 PSI MIN. AT 28 DAYS, MAX. WATER/CEMENT RATIO SHALL BE 0.5 (LB/LB), 5" MAX. SLUMP, AIR CONTENT (%) 6.5 ±1.5.
  5. CONCRETE SURFACE TO HAVE A LIGHT BROOM FINISH PERPENDICULAR TO THE LENGTH OF SIDEWALK.
  6. APPLY UNIFORM COAT OF REZ-SEAL OR APPROVED EQUIVALENT CURING COMPOUND TO EXPOSED CONCRETE IMMEDIATELY AFTER FINISHING.
  7. CONCRETE SURFACE SHALL BE FREE OF SURFACE BLEMISHES OR VOIDS GREATER THAN 1/4". JOINTS AND EDGES SHALL BE CLEAN AND FREE OF EXCESS SPALLING OR VOIDS.



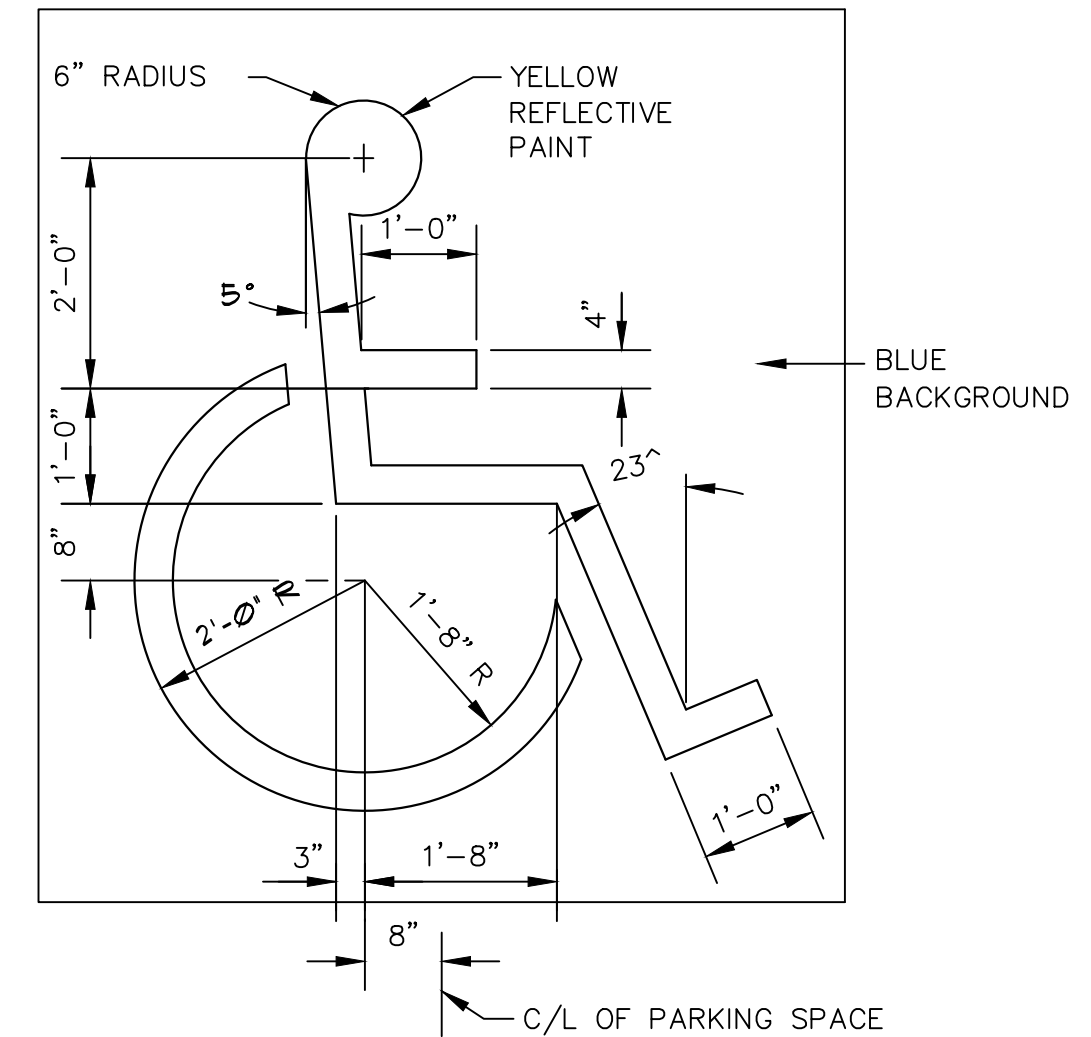
**THICKENED EDGE SIDEWALK 6**  
NOT TO SCALE C3.1



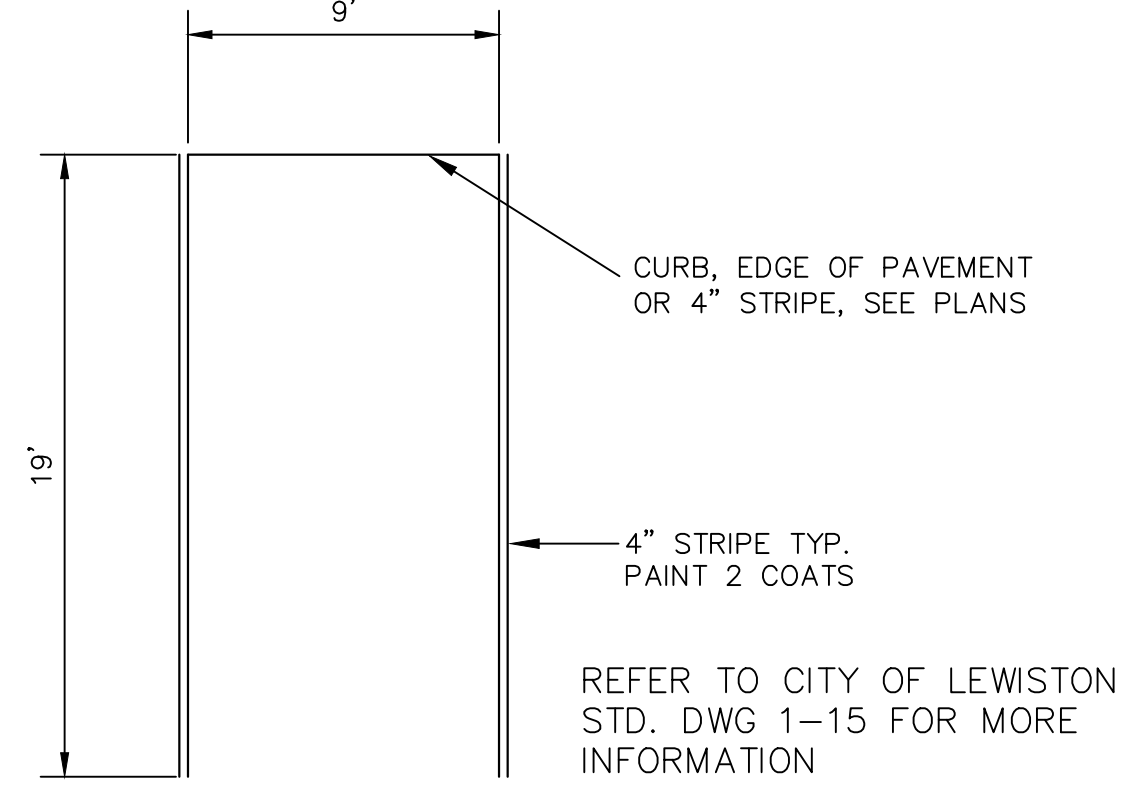
**CURB FACE DETAIL**



**ACCESSIBLE PARKING DETAIL 7**  
NOT TO SCALE C3.1



**TYPICAL PARKING DETAIL 8**  
NOT TO SCALE C3.1



**WHEELSTOP DETAIL 9**  
NOT TO SCALE C3.1

**nbw architects p.a.**  
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960 JOHN ADAMS PARKWAY, P.O. BOX 2212 - IDAHO FALLS, IDAHO 83402-2212  
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**KENWORTH SALES COMPANY, INC.**  
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LEWISTON, IDAHO

PROJECT: SHEET TITLE: C3.1

REVISIONS

PROJECT: 0044  
NO. DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
DRAWING NO.:



**RECORD DRAWINGS**  
APPROVED

NAME: *A.H. Co.* ENGINEERING MANAGER TITLE: DATE: 03/27/18

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**rbw architects p.a.**  
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LEWISTON, IDAHO

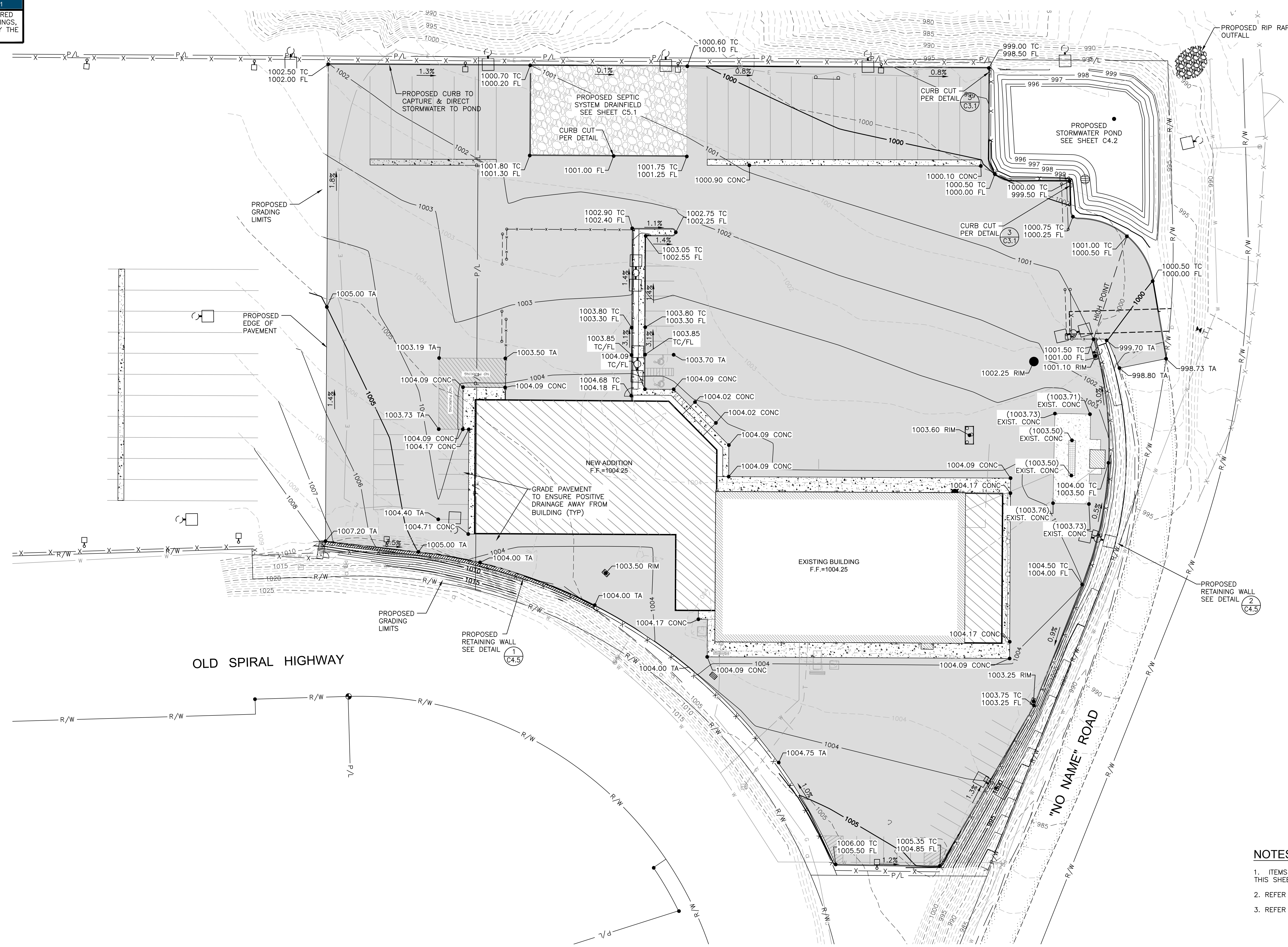
PROJECT: 1004  
SHEET TITLE: GRADING & DRAINAGE PLAN

REVISIONS

| NO. | DESCRIPTION |
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PROJECT: 1004  
NO.: 09-10-15  
DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
BY:

DRAWING NO.: **C4.0**



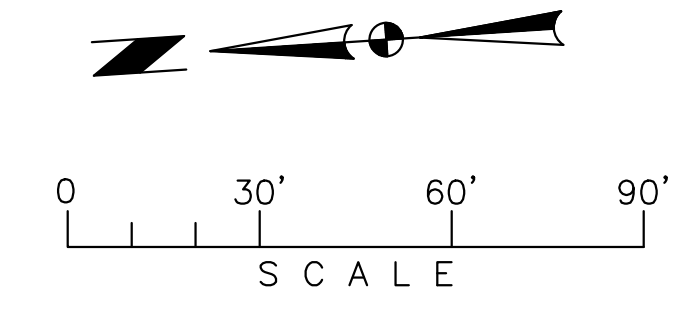
- NOTES**
1. ITEMS SCHEDULED FOR DEMOLITION ARE NOT SHOWN ON THIS SHEET. REFER TO SHEET C1.0 FOR DEMOLITION WORK.
  2. REFER TO SHEET C4.1 FOR STORM DRAINAGE INFORMATION.
  3. REFER TO SHEET C4.2 FOR POND DETAILS.

**UTILITY LOCATION**

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ENGINEERING MANAGER 03/27/18  
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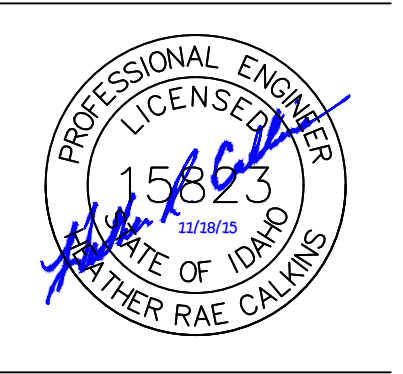
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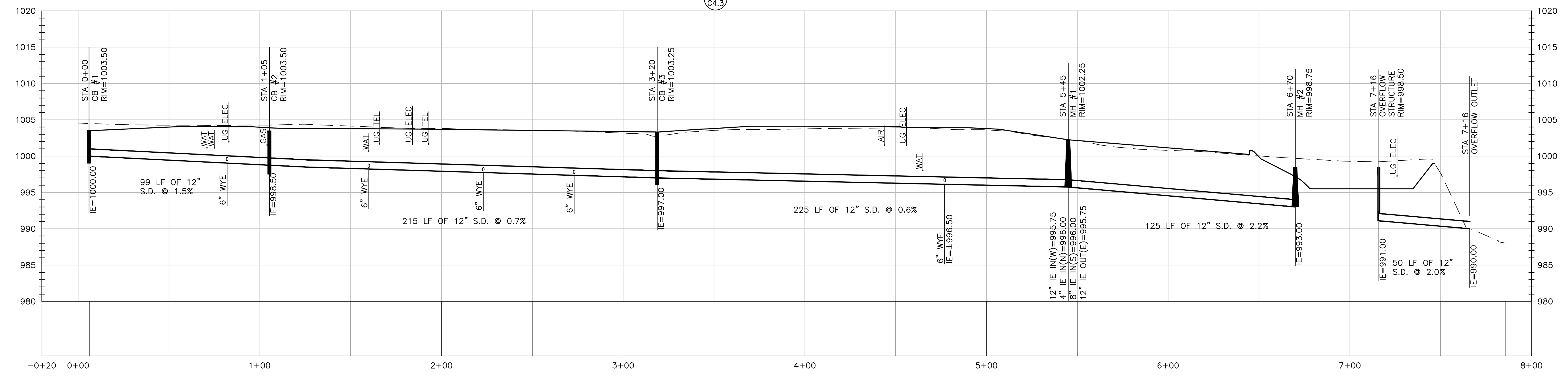
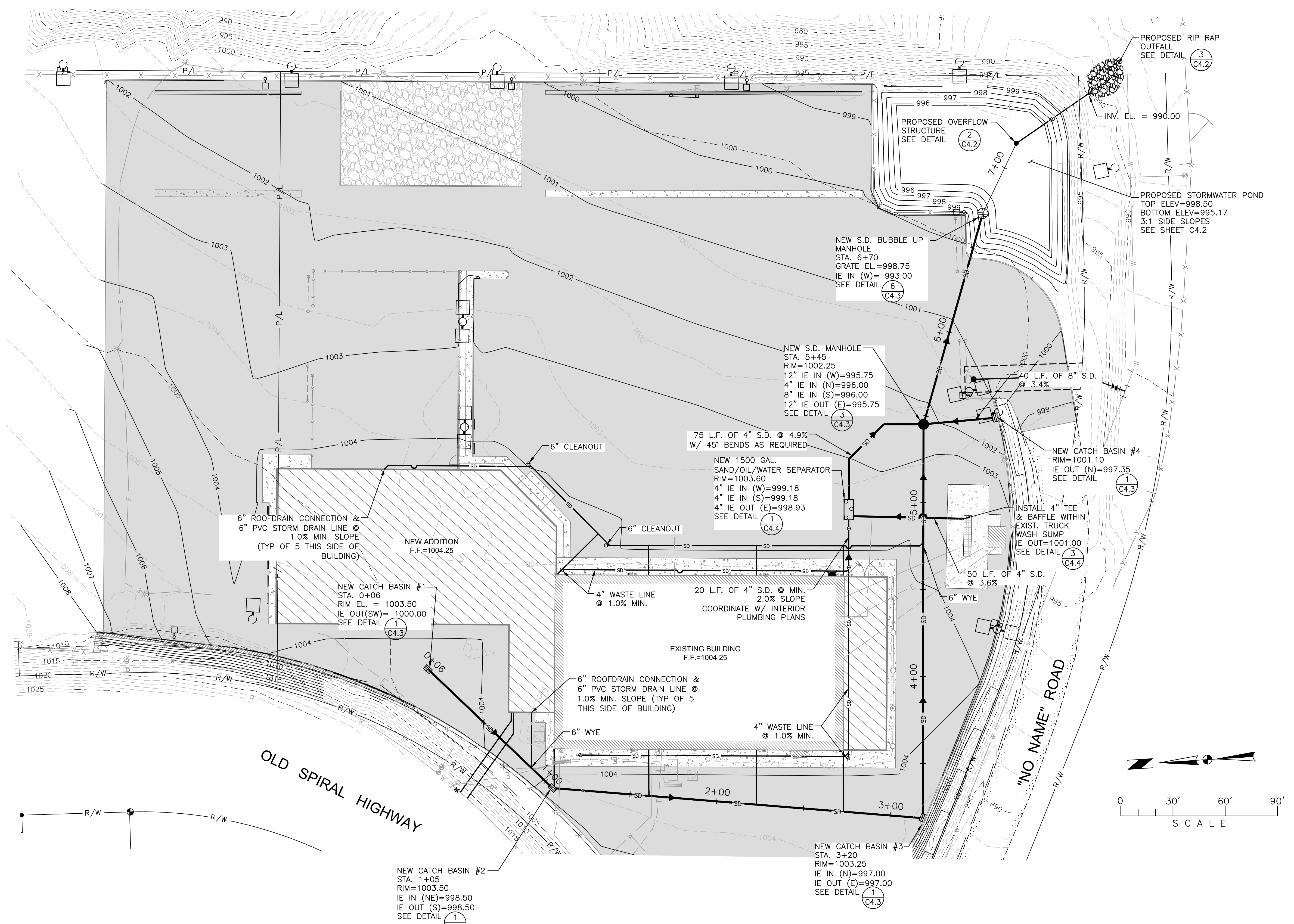
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LEWISTON, IDAHO

**STORM DRAINAGE PLAN & PROFILE**

PROJECT: NO. 0044  
DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
DRAWING NO.:

SHEET TITLE:

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**C4.1**







**RECORD DRAWINGS**  
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NAME: *[Signature]* TITLE: ENGINEERING MANAGER DATE: 03/27/18

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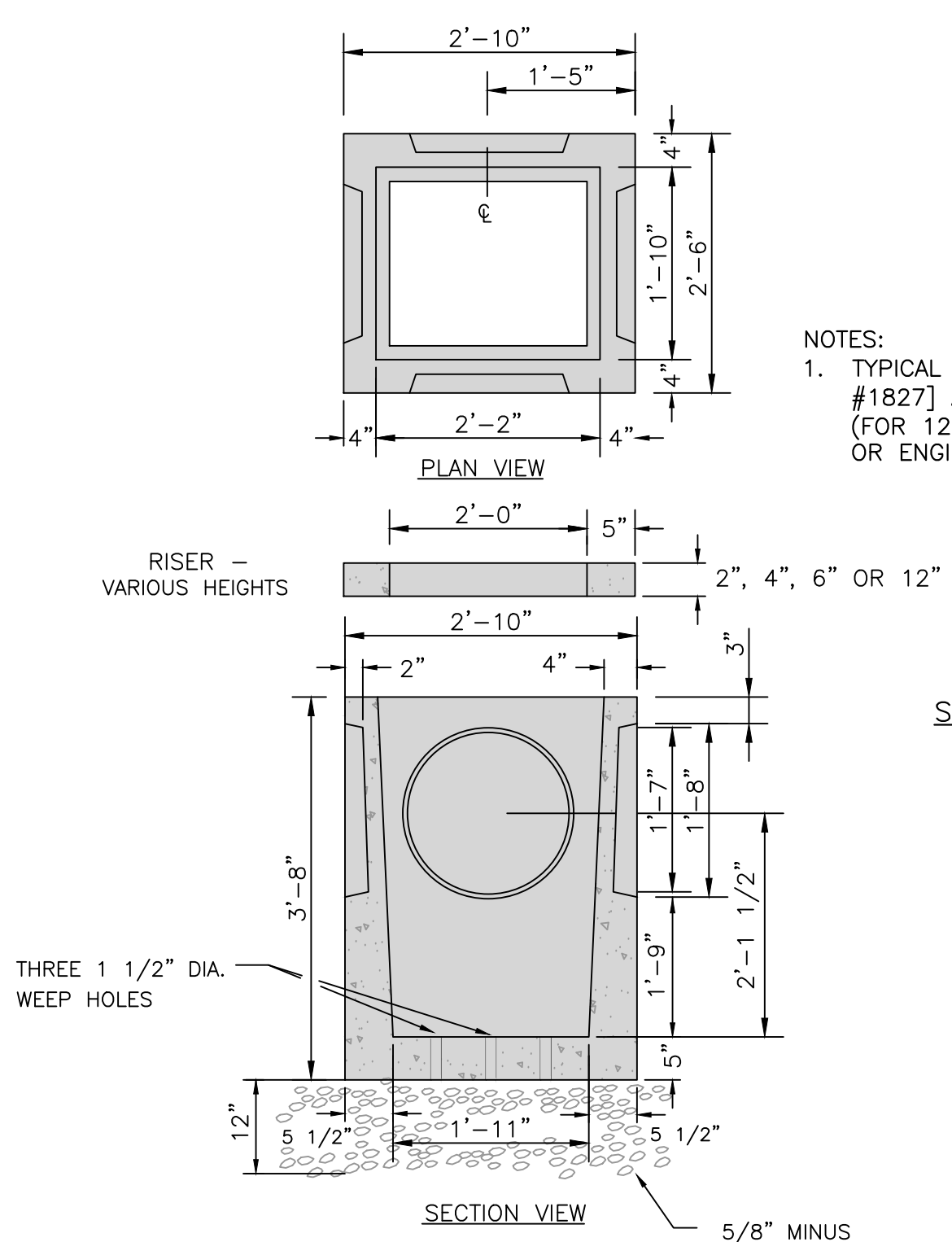
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SHEET TITLE: \_\_\_\_\_

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PROJECT: 0044  
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DATE: 09-10-15  
DRAWN BY: KJM  
CHECKED BY: HRC  
BY: \_\_\_\_\_  
DRAWING NO.: \_\_\_\_\_

**C4.3**



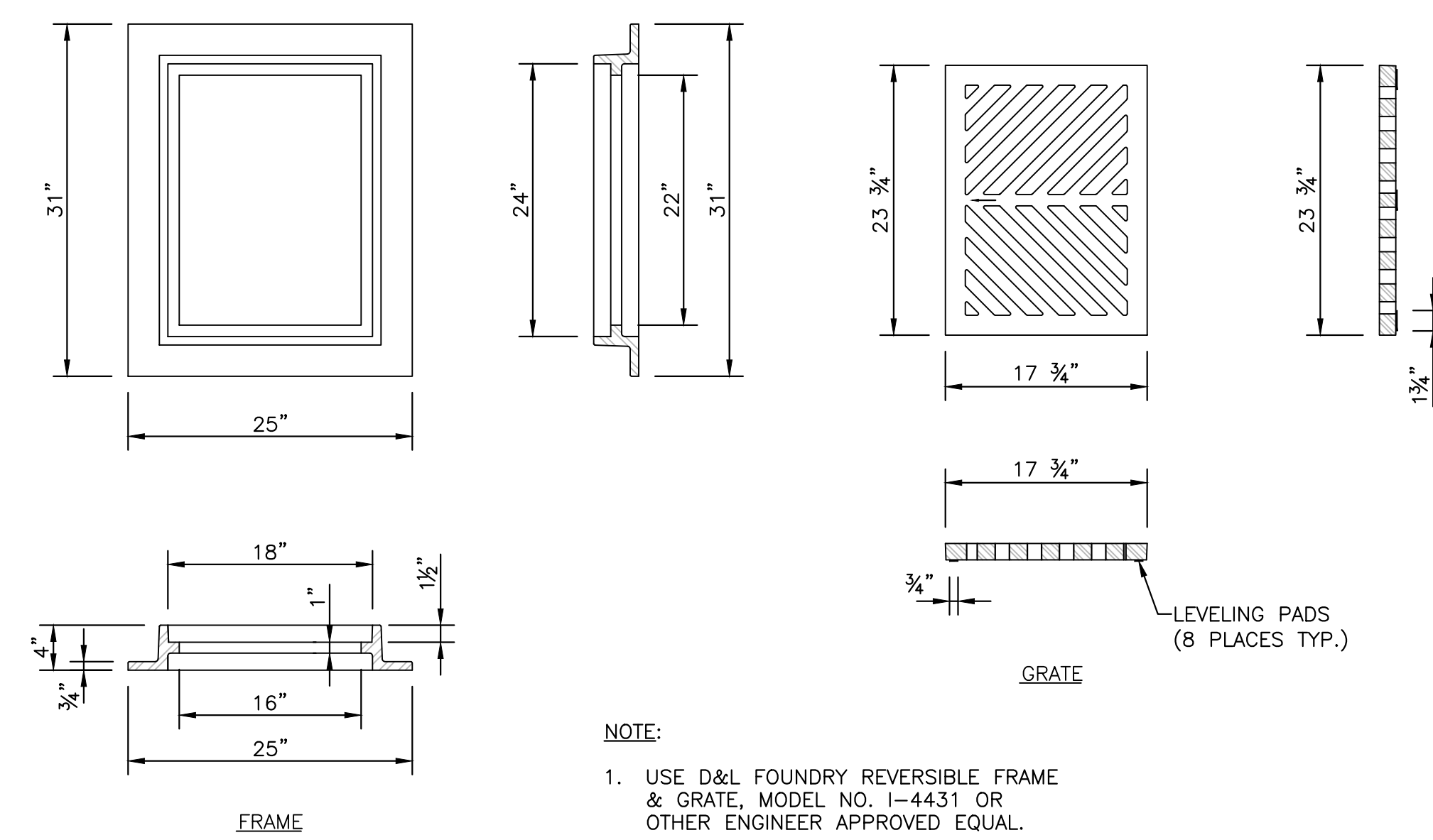
**NOTES:**

- TYPICAL CATCH BASIN [WILBERT PRECAST PRODUCT #1827] AND RISERS [WILBERT PRECAST #1830 (FOR 12") OR #1831-2.4.6 (FOR 2", 4" OR 6")] OR ENGINEER APPROVED EQUAL.

**STORMWATER CATCH BASIN NOTES:**

- ALL UNITS TO MEET OR EXCEED THE REQUIREMENTS OF ASTM C478/AASHTO M199.
- ALL CURB INLET STRUCTURES SHALL HAVE A MINIMUM 12" SUMP WITH THREE 1 1/2" DIA. WEEP HOLES IN BASE AND MINIMUM OF 12" OF COMPACTED 5/8" MINUS UNDER BASE; CRUSHED AGGREGATE MATERIAL COMPACTED TO 95% MODIFIED PROCTOR AS PER AASHTO T180.
- PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
- ALL PIPES SHALL BE FLUSH WITH BASIN WALL AND SHALL BE MORTARED ALL AROUND.
- REDUCTION SLAB, RISERS, AND FRAME & GRATE SHALL NOT BE MORE THAN ONE INCH OUT OF VERTICAL ALIGNMENT WITH CATCH BASIN BASE.
- USE A MINIMUM OF 1/2" NON-SHRINK GROUT BETWEEN RISERS, BASE, AND FRAME.
- CURB INLET TO BE PLACED WITHIN A TOLERANCE OF 1/2" HORIZONTAL ALIGNMENT FROM CURB LINE.
- SET GRATE 1" LOWER THAN PROPOSED FLOWLINE TO ENSURE POSITIVE DRAINAGE INTO CATCH BASIN. CURB FLOWLINE SHALL BE TRANSITIONED FOR 3" ON EACH SIDE OF THE CATCH BASIN TO ADJUST FOR 1" DROP. TOP OF CURB IS NOT TO BE DEPRESSED.

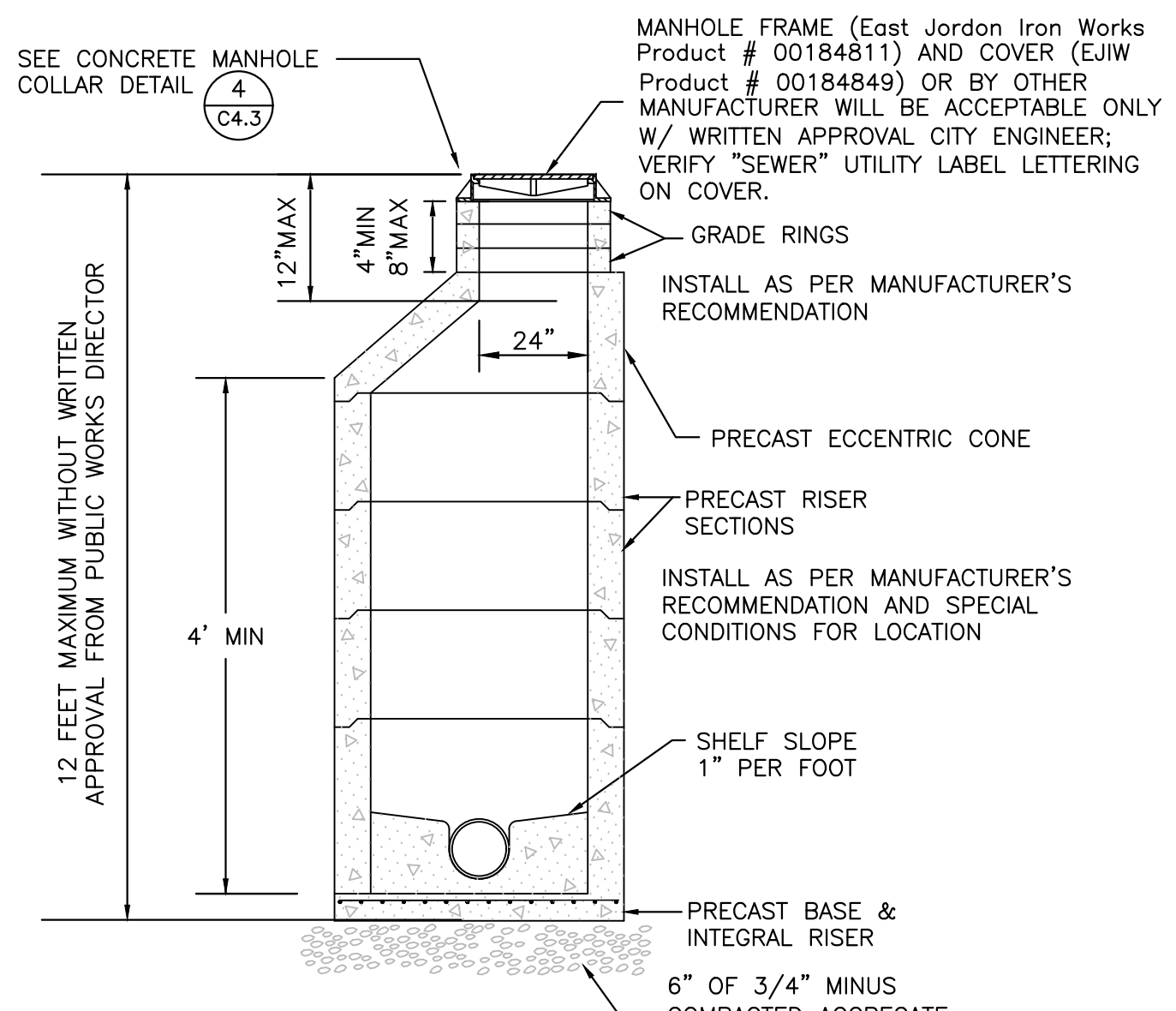
**STORMWATER TYPE 1 CATCH BASIN** (1) C4.3  
NOT TO SCALE



**NOTE:**

- USE D&L FOUNDRY REVERSIBLE FRAME & GRATE, MODEL NO. L-4431 OR OTHER ENGINEER APPROVED EQUAL.

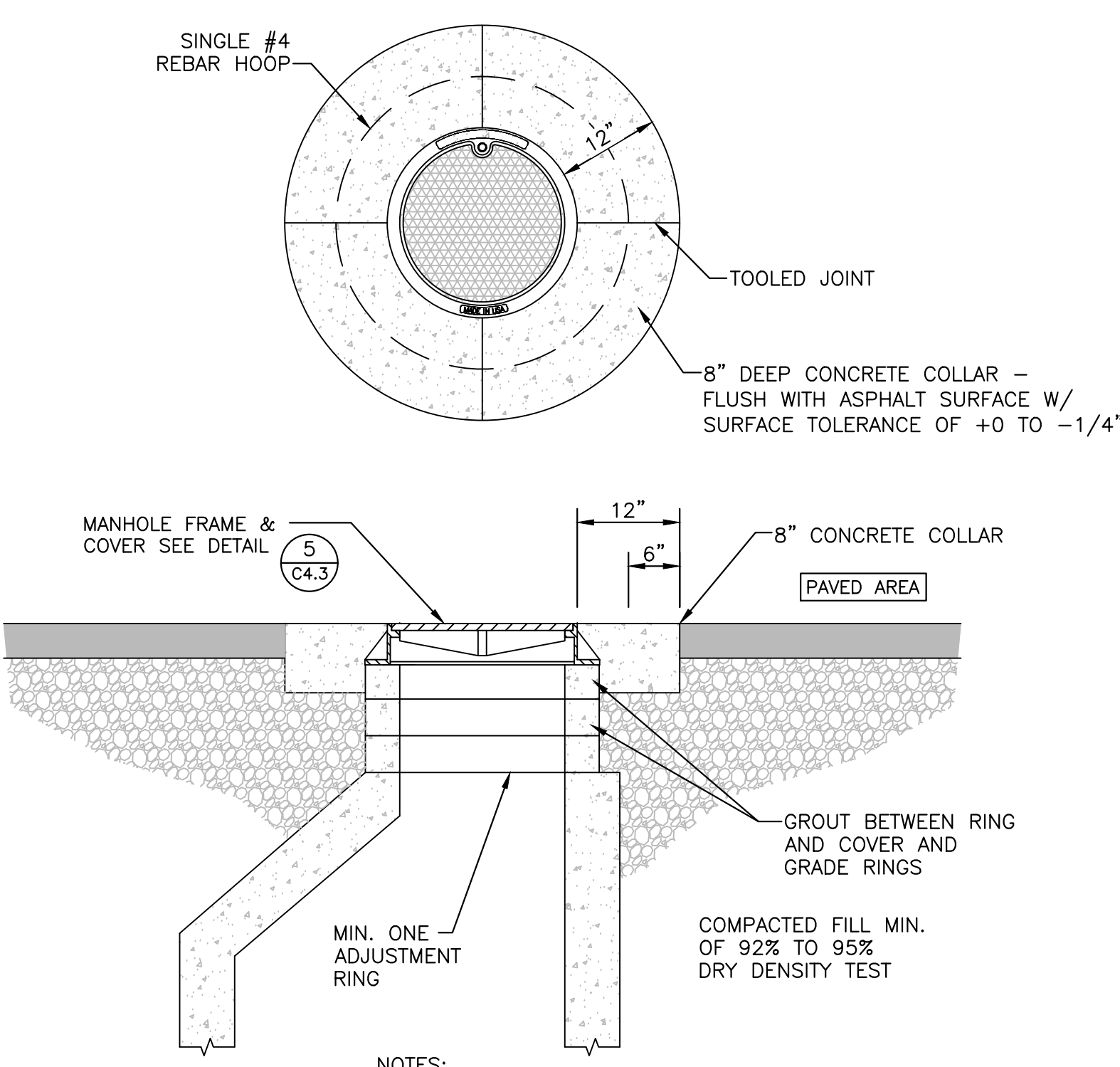
**CATCH BASIN FRAME AND GRATE** (2) C4.3  
NOT TO SCALE



**NOTES:**

- ALL UNITS TO MEET OR EXCEED THE REQUIREMENTS OF ASTM C478/AASHTO M199. JOINTS SHALL BE RUBBER GASKET CONFORMING TO ASTM C443 AND SHALL BE GROUTED FROM THE INSIDE. LIFT HOLES BE GROUTED FROM THE OUTSIDE AND INSIDE OF THE MANHOLE.
- PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
- CONNECTION TO MANHOLE SHALL BE MADE USING RESILIENT CONNECTOR CONFORMING TO ASTM C-923 SUCH AS KOR-N-SEAL, A-LOK OR APPROVED EQUAL.
- USE A MINIMUM OF 1/2" OF NON-SHRINK GROUT BETWEEN RISERS, CONE AND FRAME.
- RISERS, UNIT SECTIONS AND THE FRAME SHALL NOT BE MORE THAN ONE INCH OUT OF ALIGNMENT WITH THE MANHOLE BASE; PIPES SHALL BE FLUSH WITH INSIDE EDGE OF MANHOLE.
- SEE DETAIL 4, THIS SHEET, FOR CONCRETE MANHOLE COLLAR DETAIL.

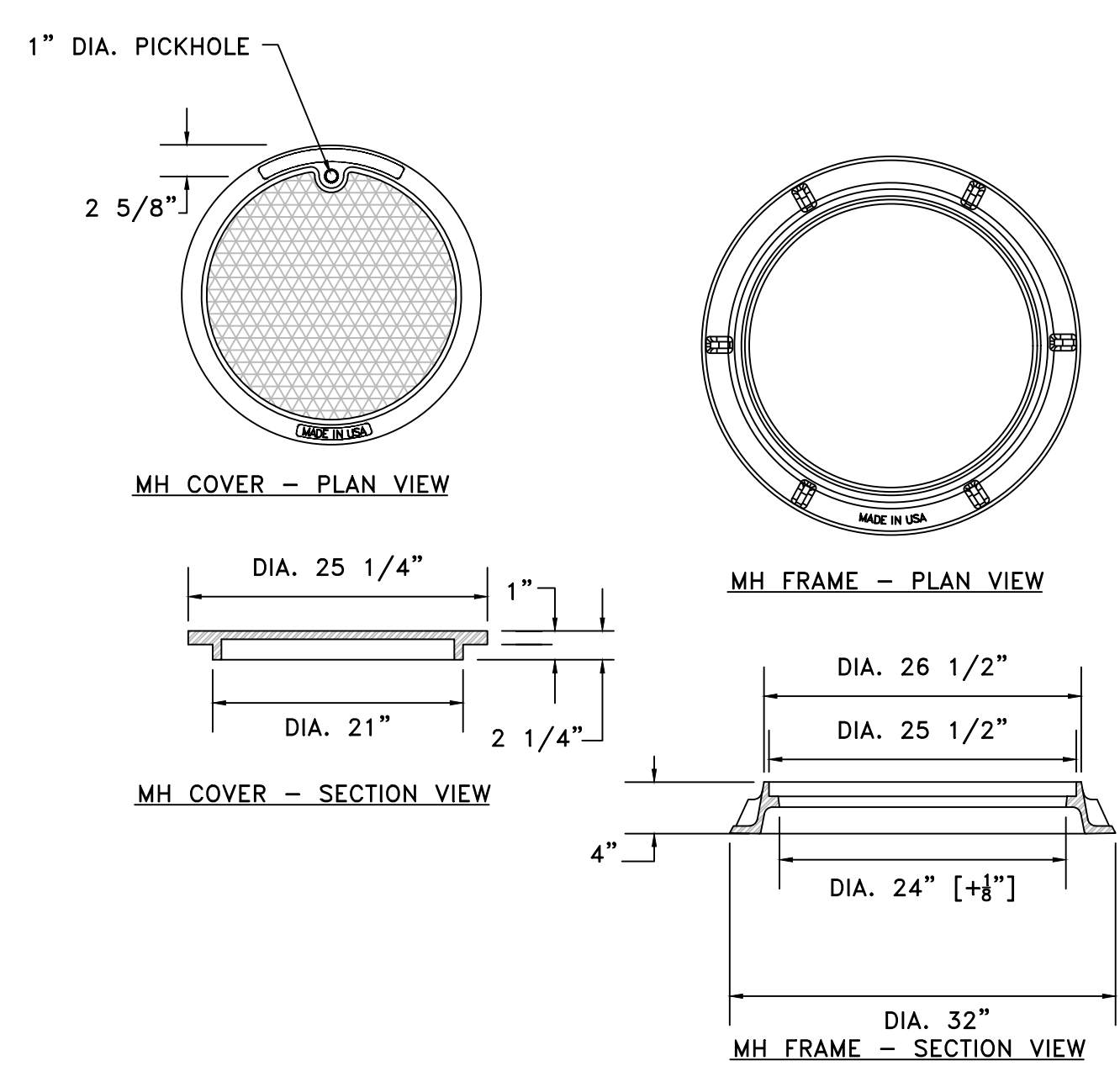
**STORMWATER MANHOLE TYPE 1** (3) C4.3  
NOT TO SCALE



**NOTES:**

- CONCRETE SHALL BE 3,000 PSI MIN. AT 28 DAYS. WATER/CEMENT RATIO SHALL BE 0.5, 3" MAX. SLUMP AND 3% TO 6% ENTRAINED AIR.
- ALL EDGES WILL BE SEALED WITH CSSI OR APPROVED EQUAL. ALL TOP EDGES WILL BE TACKED AND SAND SEALED.

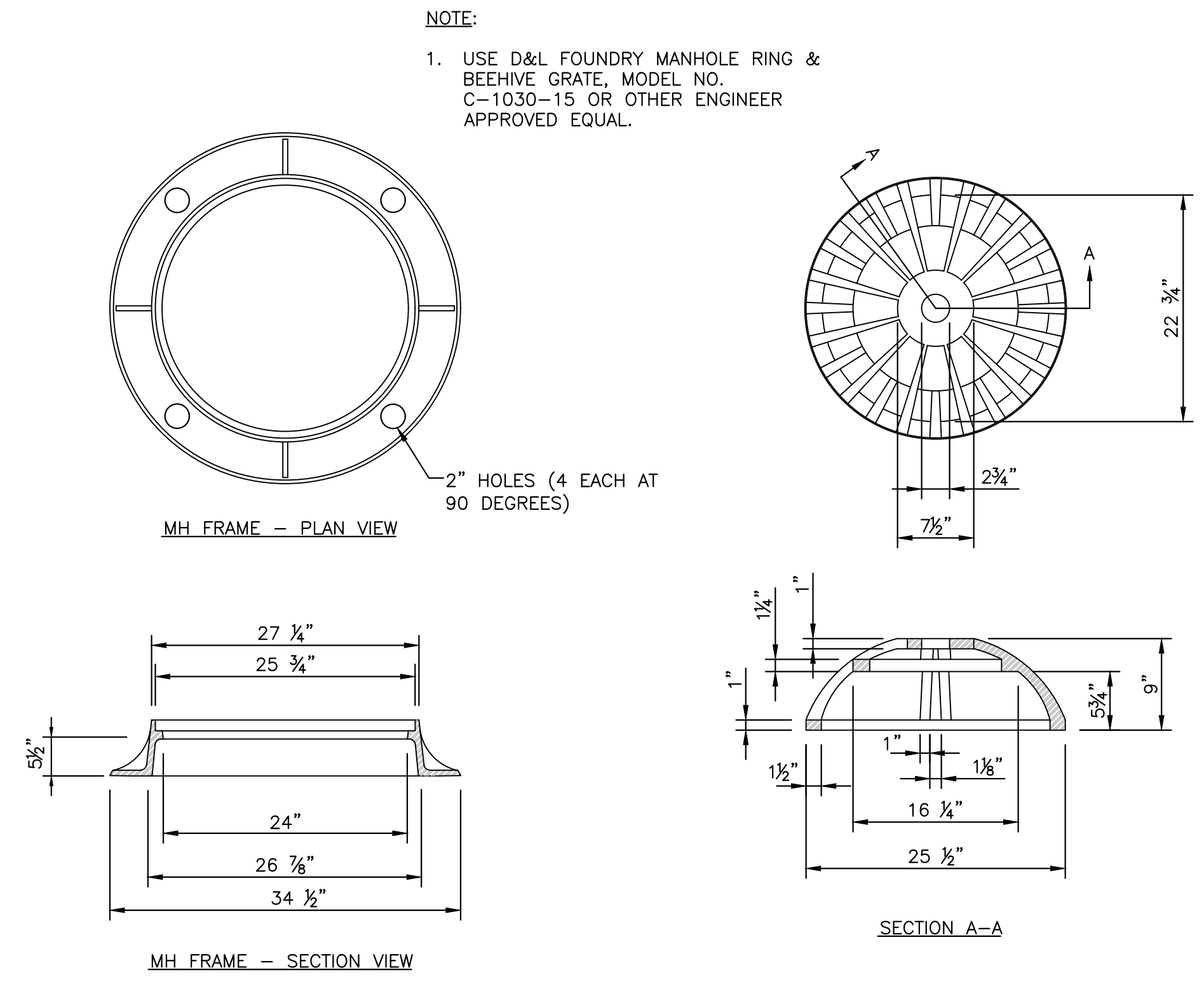
**CONCRETE MANHOLE COVER** (4) C4.3  
NOT TO SCALE



**NOTES:**

- MANHOLE FRAME [EAST JORDAN IRON WORKS PRODUCT #00184811 OR D&L FOUNDRY A-2003] AND COVER [EJW #00184849 OR D&L A-2010-01] OR OTHER MANUFACTURER WILL BE ACCEPTABLE ONLY WITH WRITTEN APPROVAL FROM PUBLIC WORKS DEPT.
- COVER MATERIAL SPECIFICATION GRAY IRON (ASTM A48 CL35B)

**STORMWATER MANHOLE FRAME AND COVER** (5) C4.3  
NOT TO SCALE

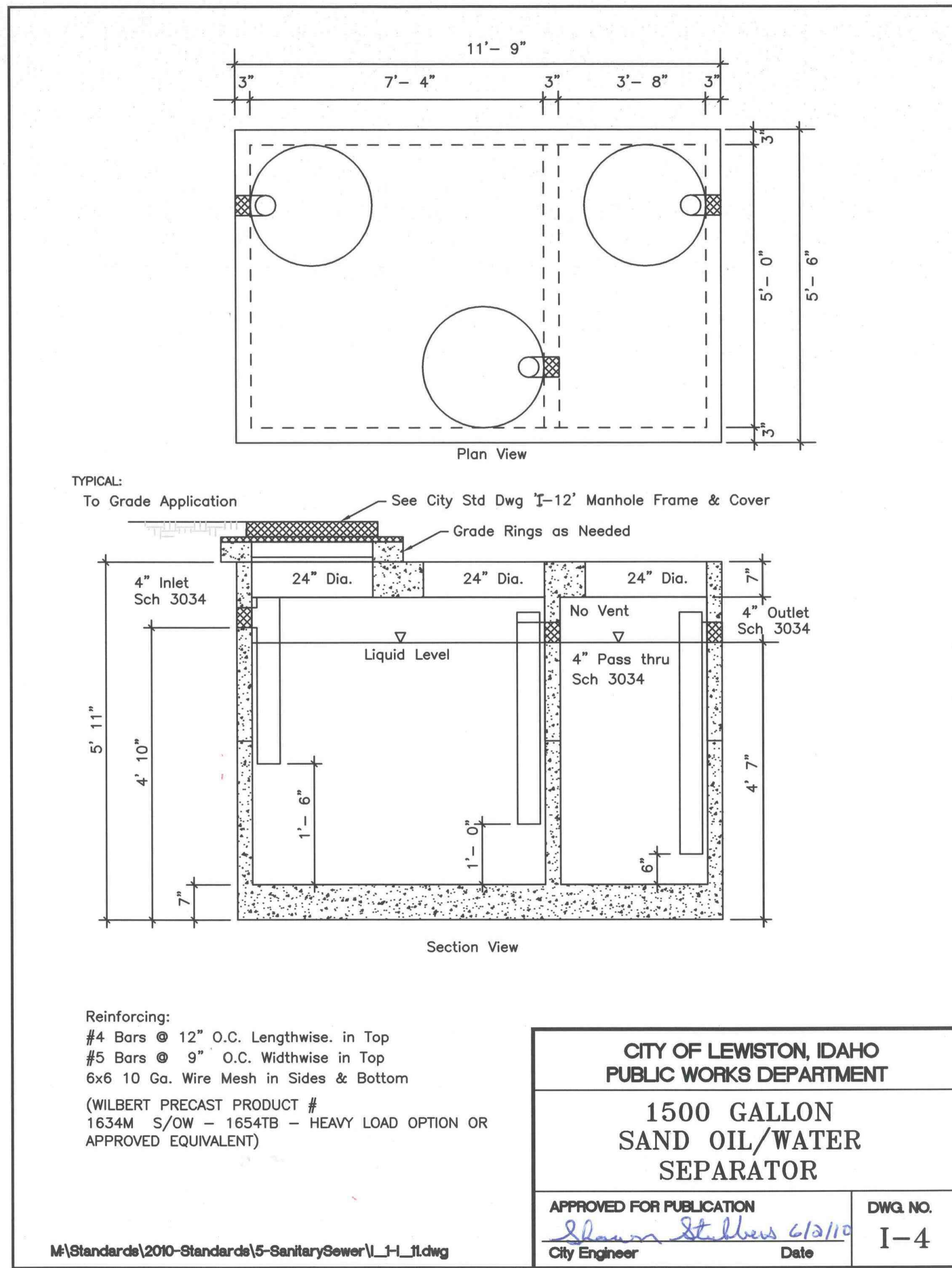


**NOTE:**

- USE D&L FOUNDRY MANHOLE RING & BEEHIVE GRATE, MODEL NO. C-1030-15 OR OTHER ENGINEER APPROVED EQUAL.

**STORMWATER MANHOLE FRAME AND BEEHIVE GRATE** (6) C4.3  
NOT TO SCALE





1500 GALLON SAND/OIL/WATER SEPARATOR 1  
NOT TO SCALE C4.4

**RECORD DRAWINGS**  
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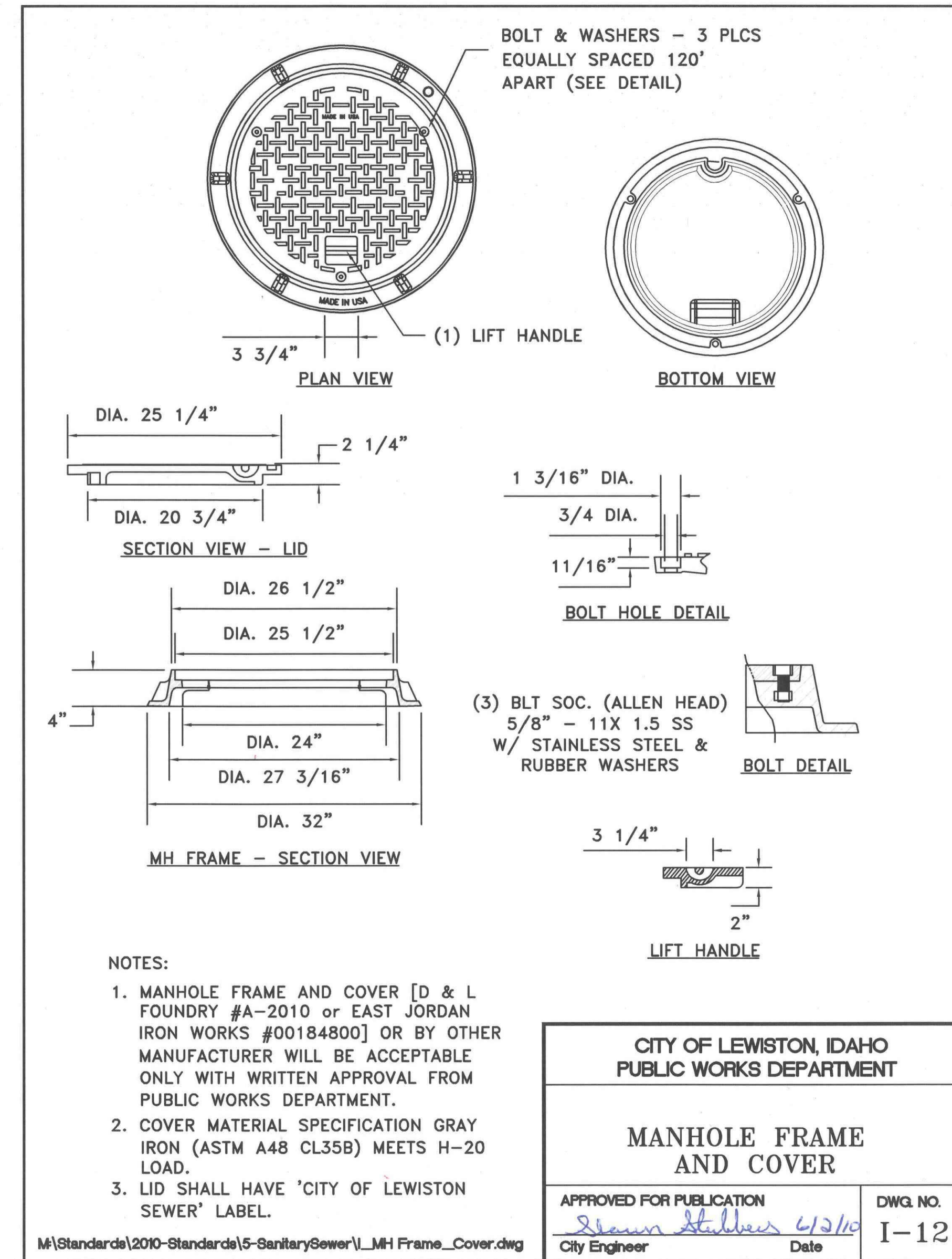
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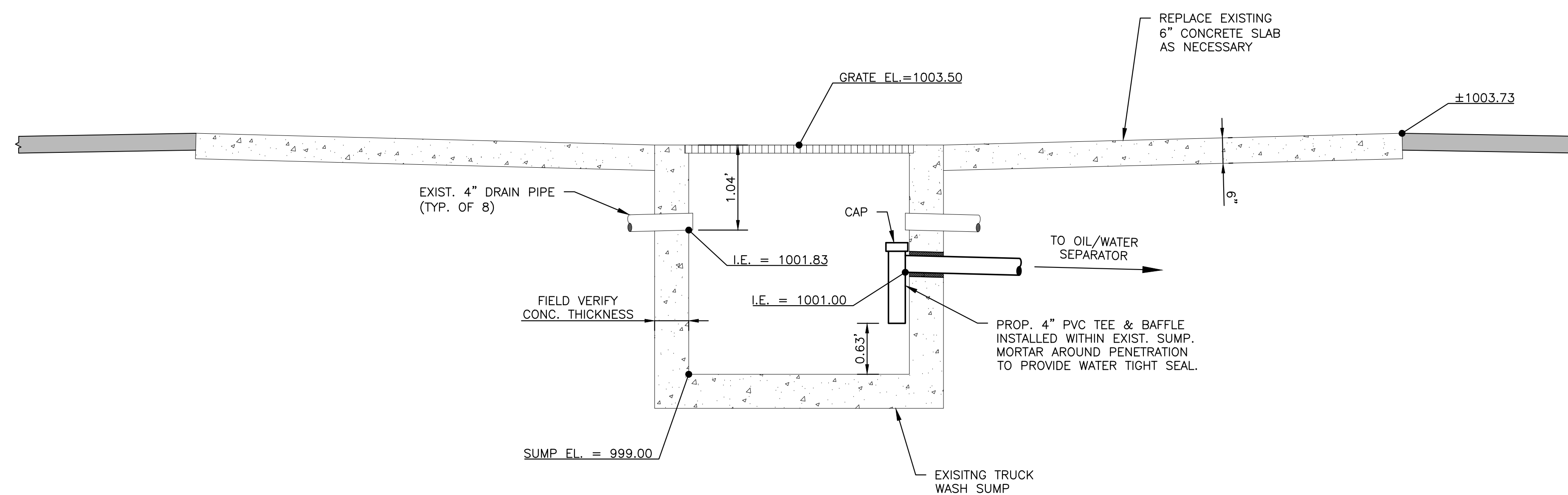
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SAND/OIL/WATER SEPARATOR  
MANHOLE FRAME & COVER 2  
NOT TO SCALE C4.4



TRUCK WASH SUMP OUTLET 3  
NOT TO SCALE C4.4

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STORM DRAINAGE DETAILS

PROJECT: 0044

NO. 09-10-15

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CHECKED BY: HRC

DRAWING NO.:

**C4.4**



**RECORD DRAWINGS**  
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NAME:                      ENGINEERING MANAGER 03/27/18  
TITLE:                      DATE:                     

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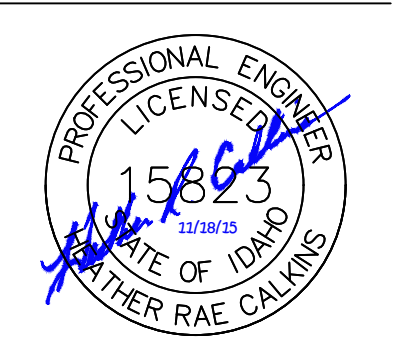
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WATFORD CITY NORTH DAKOTA



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1643 OLD SPIRAL HIGHWAY  
LEWISTON, IDAHO

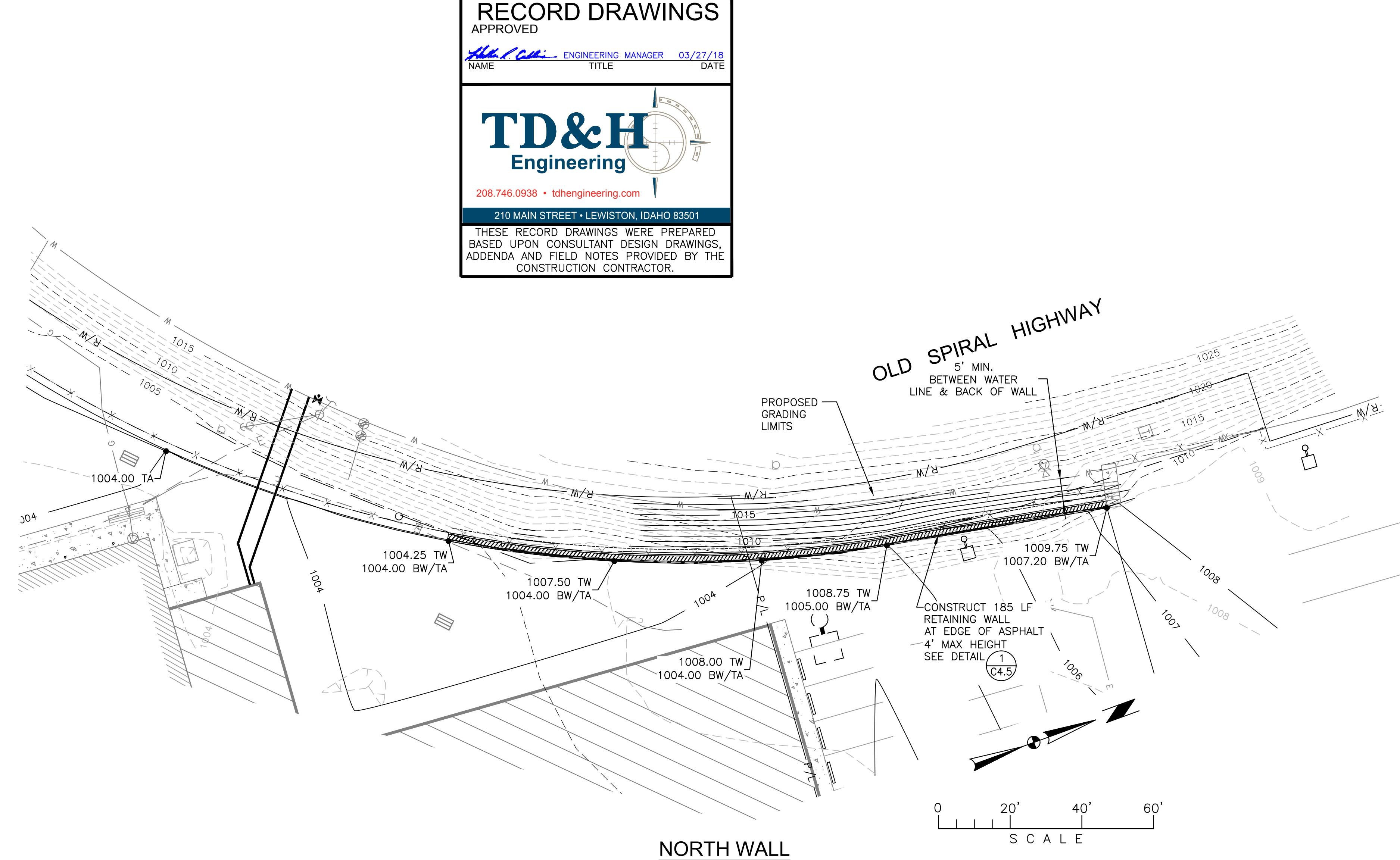
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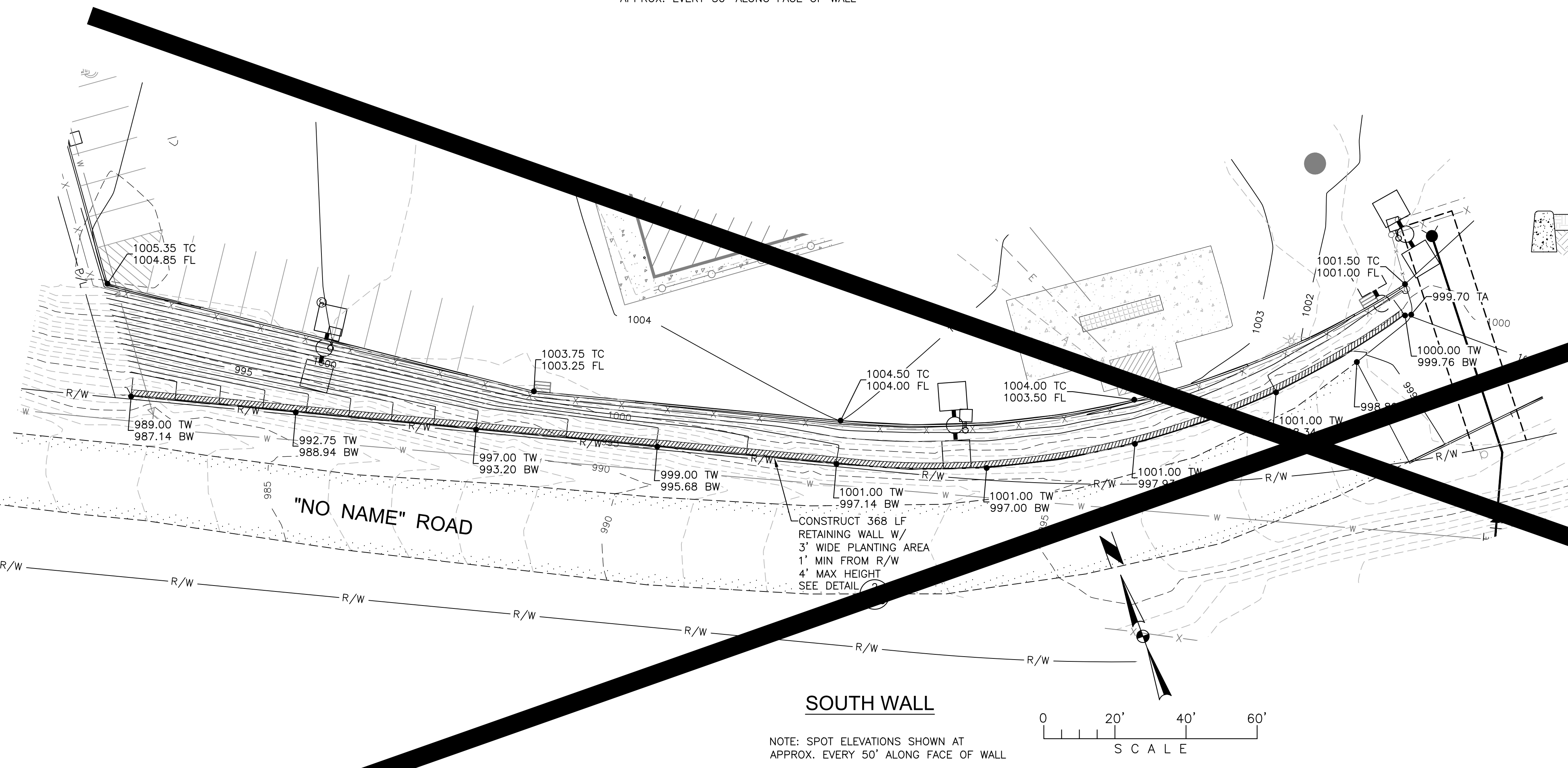
PROJECT NO. 004  
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**C4.5**



**NORTH WALL**

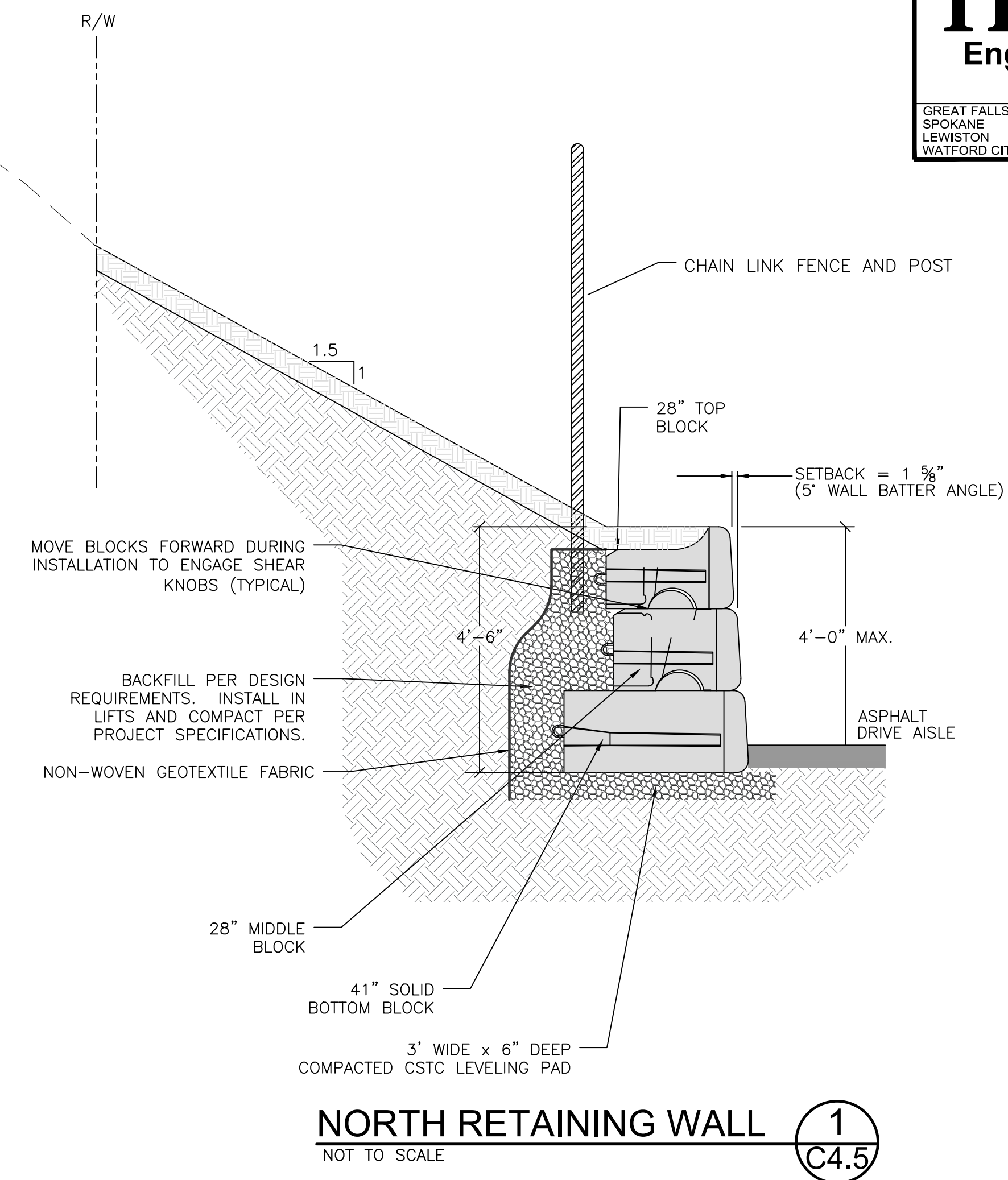
NOTE: SPOT ELEVATIONS SHOWN AT APPROX. EVERY 50' ALONG FACE OF WALL



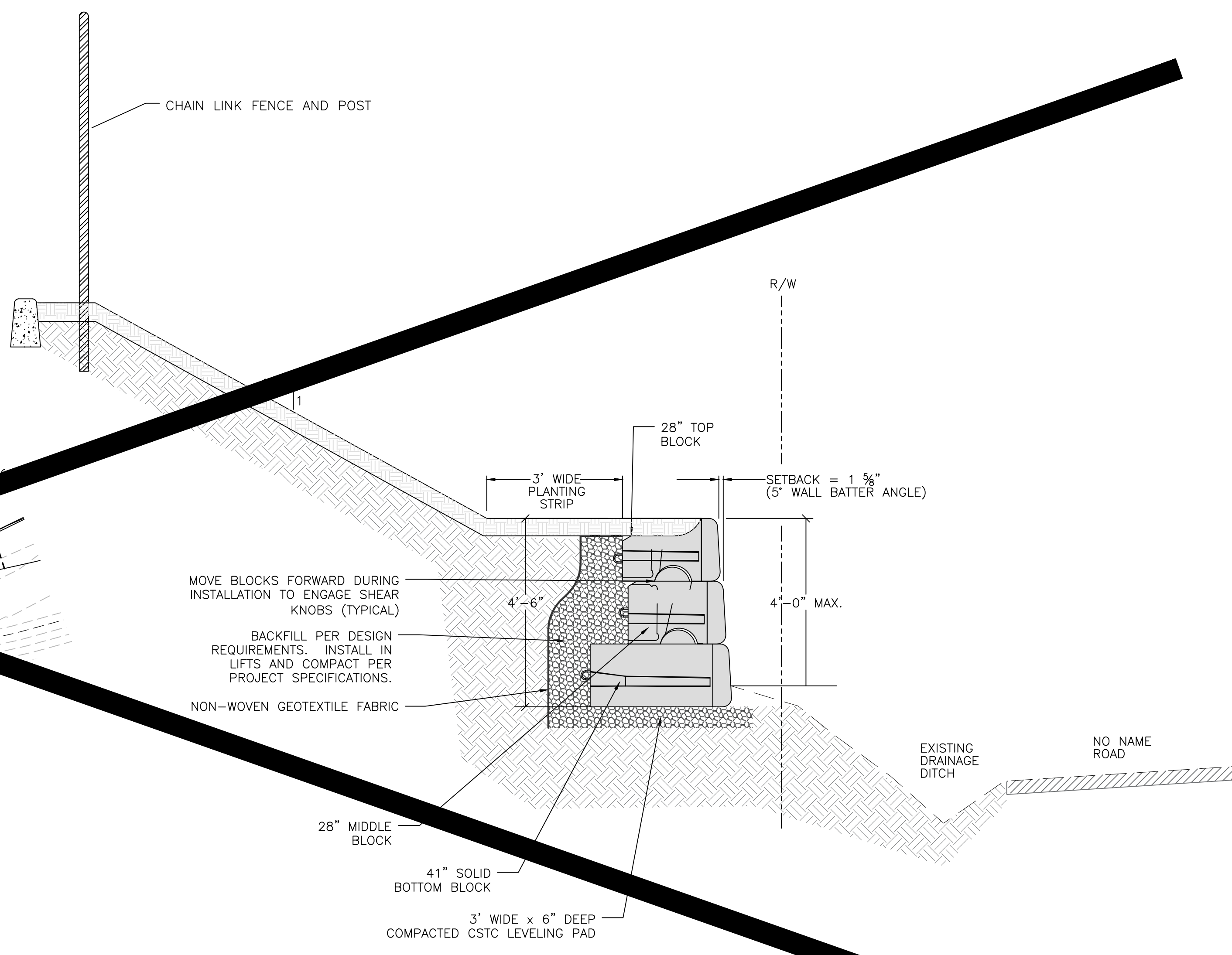
**SOUTH WALL**

NOTE: SPOT ELEVATIONS SHOWN AT APPROX. EVERY 50' ALONG FACE OF WALL

OLD SPIRAL HIGHWAY



**NORTH RETAINING WALL** (1)  
NOT TO SCALE (C4.5)



**SOUTH RETAINING WALL** (2)  
NOT TO SCALE (C4.5)

RETAINING WALL PLAN



## SEPTIC SYSTEM CONSTRUCTION NOTES

- LOCATIONS OF UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE AND FOR GENERAL INFORMATION PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING UTILITY LOCATIONS PRIOR TO BEGINNING EXCAVATION.
- ALL WORK TO BE PERFORMED SHALL BE IN CONFORMANCE WITH THE IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) AND PUBLIC HEALTH IDAHO NORTH CENTRAL DISTRICT'S "TECHNICAL GUIDANCE MANUAL FOR INDIVIDUAL & SUBSURFACE SEWAGE DISPOSAL SYSTEMS", AND IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
- ALL PORTIONS OF THE SYSTEM WILL BE A MINIMUM OF 5 FEET FROM PROPERTY LINES. THE DRAINFIELD MUST BE A MINIMUM OF 100 FEET FROM ANY WELLS AND SURFACE WATER. THE SEPTIC TANK AND SEALED LINES MUST BE A MINIMUM OF 50 FEET FROM WELLS.
- PLACE TRAFFIC BARRIERS AS NECESSARY TO PREVENT VEHICULAR TRAFFIC ON DRAINFIELD.
- A SINGLE CLEANOUT SHALL BE INSTALLED AT 2 FEET FROM STRUCTURE, AND AN ADDITIONAL CLEANOUT INSTALLED FOR EVERY HUNDRED (100) FOOT LENGTH THEREAFTER.
- THE SEPTIC TANK IS TO BE LEAK TESTED PRIOR TO SERVICE.
- SEAL ALL JOINTS AT SEPTIC TANK WITH WATERTIGHT SEALS.
- GRADE SYSTEM SURFACE AND SURROUNDING GROUND FOR DRAINAGE AWAY FROM DRAINFIELD & SEPTIC TANK.
- MAINTAIN A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN OUTSIDE OF PIPES OF SANITARY SEWER AND WATER LINES AT CROSSINGS. MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN OUTSIDE OF SANITARY SEWER AND WATER MAIN LINES.
- MAINTAIN A MINIMUM PIPE SLOPE OF 2% FROM BUILDINGS TO THE SEPTIC TANK.
- NOTIFY THE ENGINEER OF ANY CHANGES IN THE DESIGN.
- CONTRACTOR TO COORDINATE FINAL INSPECTION WITH ENGINEER AND PUBLIC HEALTH IDAHO NORTH CENTRAL DISTRICT. AS-BUILT PLANS MUST BE SUBMITTED TO PUBLIC HEALTH IDAHO NORTH CENTRAL DISTRICT BY THE ENGINEER WITH A CERTIFICATION STATING THE SYSTEM HAS BEEN INSTALLED ACCORDING TO THE APPROVED DESIGN.

## UNDERGROUND FIRE SERVICE INSTALLATION NOTES

THE FOLLOWING REQUIREMENTS SHALL BE FOLLOWED FOR EVERY UNDERGROUND FIRE SERVICE INSTALLATION. PLEASE NOTE: WATER PURVEYORS MAY HAVE MORE STRINGENT REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RESPECTIVE WATER COMPANY FOR ANY ADDITIONAL REQUIREMENTS. NFPA 13 & 24.

### FIRE DEPARTMENT ACCESS

- SECURITY GATES ARE DESIRED AT ANY ENTRANCES TO THE SITE. THEY SHALL BE PROVIDED WITH A FIRE DEPARTMENT APPROVED KEY ENTRY SYSTEM. THE COMPLETED GATES SHALL REMAIN OPEN AND NOT OBSTRUCT THE FIRE DEPARTMENT ACCESS UNTIL INSPECTED AND APPROVED BY THE FIRE PREVENTION BUREAU. BEGIN APPLICATION PROCESSING WITH THE FIRE DEPARTMENT PRIOR TO THE BUILDING PERMIT BEING ISSUED. IFC 503.6

### PLANS

- A MINIMUM OF TWO (3) SETS OF WET STAMPED, SIGNED DRAWINGS SHALL BE SUBMITTED.
- PLANS SHALL INDICATE:
  - SIZE AND TYPE OF MATERIAL FOR UNDERGROUND SERVICE LINE.
  - LOCATION AND A DETAIL (I.E. SPECIFIC MEASUREMENTS) FOR THRUST BLOCKS.
  - SIZE, TYPE AND LOCATION OF BACKFLOW PREVENTION DEVICE OR CHECK VALVE.
- A MINIMUM OF A DOUBLE BACKFLOW PREVENTION DEVICE IS REQUIRED WHEN USING DOMESTIC WATER SUPPLY. THE DEVICE SHALL BE LISTED AND APPROVED FOR ITS INTENDED USE WITH A MINIMUM CLASS 150 LISTING. CHECK W/WATER PURVEYOR.
- SYSTEMS UTILIZING RAW WATER SUPPLY ARE REQUIRED TO PROVIDE A LISTED STRAINER DEVICE. STRAINERS SHALL BE PROVIDED WITH FLUSH CONNECTIONS PIPED TO THE BUILDING EXTERIOR TO PROVIDE FOR REQUIRED ANNUAL STRAINING.
- UNDERGROUND FIRE MAINS TO COMPLY WITH NFPA 24 AND AWWA STANDARDS.
- FIRE HYDRANTS SHALL BE INSTALLED PER CITY STANDARD W-5 & W-6.
- VAULT TO BE SIZED TO ACCOMMODATE THE ANNUAL TEST AND INSPECTION OF THE DOUBLE BACKFLOW PREVENTION DEVICE. THE FIRE INSPECTOR WILL EVALUATE VAULT SIZE ON A CASE-BY-CASE BASIS.

### UNDERGROUND FIRE SERVICE

- UNDERGROUND FIRE SERVICE MAINS AND COMPONENTS SHALL CONFORM TO NFPA 24 MINIMUM STANDARD. THE PLANS SHALL BE REVIEWED AND APPROVED BY THE FIRE DEPARTMENT PRIOR TO INSTALLATION. STAMPED APPROVED PLANS MUST BE KEPT ON SITE FOR THE FIRE INSPECTOR. IFC 105.3.5
- PROVIDE THE FIRE DEPARTMENT WITH ONE 8 1/2" x 11" PLAN INDICATING UNDERGROUND SYSTEM. THIS MUST BE A CLEAR, EASILY READ COPY FOR USE BY SUPPRESSION CREWS.
- ALL NEW FIRE HYDRANTS SHALL MEET THE FOLLOWING REQUIREMENTS:
  - NEW HYDRANT WILL BE:
    - WATEROUS PACER
    - MEULLER CENTURIAN
  - 6" MINIMUM SUPPLY FOR FIRE HYDRANT.
  - IF COMBUSTIBLE BUILDING MATERIALS ARE USED (INCLUDING FRAMING) THE WATER SUPPLY (INCLUDING MAINS AND HYDRANTS) SHALL BE DESIGNED, INSTALLED, TESTED AND APPROVED BY THE FIRE DEPARTMENT PRIOR TO STOCKING COMBUSTIBLE BUILDING MATERIALS.
  - WATER SUPPLY SYSTEMS FOR PHASED CONSTRUCTION SHALL PROVIDE REQUIRED FIRE FLOWS AT ALL PHASES.
  - ALL FIRE HYDRANTS SHALL BE PROVIDED WITH A 5-INCH HARRINGTON HIHS STORZ ADAPTOR WITH THE APPROVED ATTACHED SEAL CAP AND AIRCRAFT CABLE.
- INDICATE WITH A NOTE WHETHER THE FIRE SPRINKLER SYSTEM SUPPLY WILL BE A DEDICATED WATER SUPPLY OR WILL BE IN CONJUNCTION WITH DOMESTIC WATER (NFPA 13C AND 13D SYSTEMS ONLY)
- SIZE AND TYPE OF FIRE SERVICE MAINS SHALL BE APPROVED BY THE FIRE DEPARTMENT PRIOR TO INSTALLATION. UNDERGROUND SUPPLY LINES FOR FIRE SPRINKLER SERVICE LESS THAN 6" IN DIAMETER SHALL BE MINIMUM SCHEDULE 80. NFPA 13.2.4
- UNDERGROUND PIPING AND FITTINGS TO BE RODDED AND THRUST BLOCKED ACCORDING TO NFPA-24, A.W.W.A AND ANY OTHER STANDARDS THAT MAY APPLY.
- INSTALLATION TO BE IN ACCORDANCE WITH STATE AND LOCAL A.H.J.'S. UNDERGROUND PIPE TO BE FLUSHED IN ACCORDANCE WITH NFPA-24 AND A.W.W.A.
- UNDERGROUND PIPING TO BE HYDROSTATICALLY TESTED WITH ALLOWABLE LEAKAGE IN ACCORDANCE WITH NFPA-24, AND A.W.W.A. M23/C-600.
- ALL UNDERGROUND PIPING TO BE CHLORINATED AS PER REQUIREMENTS OF THE STATE HEALTH DEPARTMENT, AND A.W.W.A. C-651.
- CHLORINATION TEST TO BE DONE ON BASIS OF 50 P.P.M. OVER 24 HR. PERIOD.
- UNDERGROUND PIPING IS U.L. LISTED
  - CLASS 150 PVC C-900 DR-18
  - CLASS 200 PVC C-900 DR-14
  - CLASS 50 DUCTILE IRON
- ALL DUCTILE IRON PIPE IS CEMENT LINED AND SHALL BE INCASED IN POLYETHYLENE TUBING.

## NOTES ON THRUST BLOCKING

- ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL.
- WHERE SOIL CONDITIONS MAKE IT NECESSARY TO POUR CONCRETE OVER JOINTS, THE END OF THE ADJACENT PIPES MUST HAVE A THRUST BLOCK TO RESIST MOVEMENT OF THESE JOINTS.
- WEIGHT CALCULATIONS TO BE BASED ON THRUST DUE TO STATIC PRESSURE + 50% (THRUST = 2AP WHERE A = AREA OF PIPE P = WATER PRESSURE).
- WHEN BLOCKING AGAINST PLUG, PLUG SHALL BE COVERED TO PREVENT BONDING OF CONCRETE.
- WHERE SHEAR BECOMES A PROBLEM PROPER REINFORCING MUST BE INSTALLED INTO THE BLOCKING.
- CLEARANCE SHALL BE A MINIMUM OF 6" BETWEEN PIPE AND OBSTRUCTIONS.
- CLEARANCE ON PIPES BELONGING TO OIL/GAS COMPANIES SHALL BE 18" UNLESS SPECIAL PERMISSION IS GIVEN BY THESE COMPANIES

## UTILITY LOCATION

THE LOCATIONS OF UNDERGROUND UTILITIES REPRESENTED ON THIS DRAWING HAVE BEEN DETERMINED FROM A FIELD SURVEY AND FROM RECORDS OBTAINED FROM THE VARIOUS UTILITY COMPANIES. THE NUMBER AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. FOR YOUR SAFETY, STATE LAW REQUIRES THAT YOU CALL THE LOCAL "ONE-CALL" UNDERGROUND UTILITY LOCATING CENTER AT LEAST TWO WORKING DAYS BEFORE BEGINNING ANY EXCAVATION: 1-800-342-1585



Know what's below.  
Call before you dig.

"CALL BEFORE YOU DIG"

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WATFORD CITY NORTH DAKOTA



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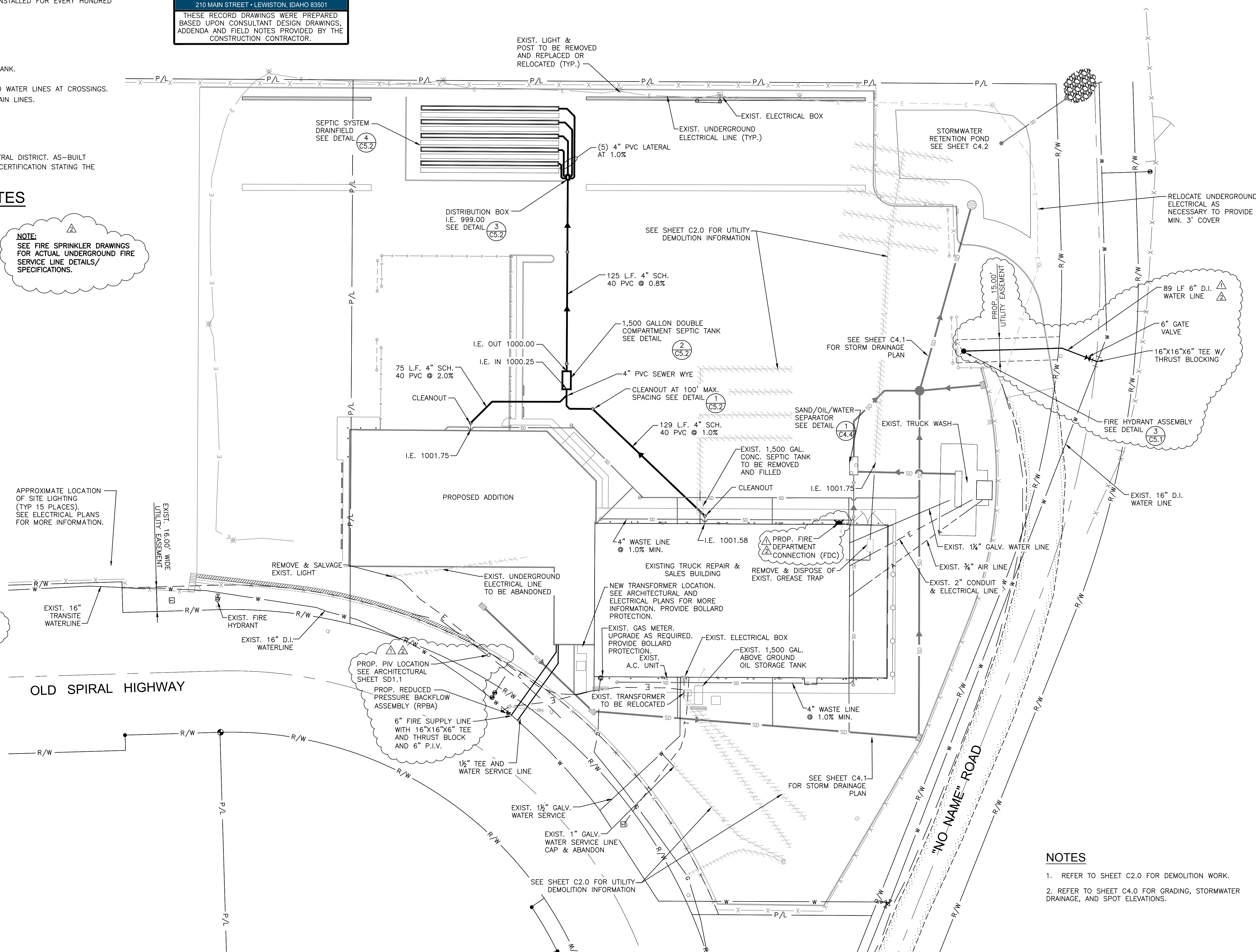
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| 2   | 12/22/15 | CITY REVIEW COMMENTS  |
| 3   | 08-05-16 | SEWER SYSTEM AS-BUILT |

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NO. DATE: 09-10-15

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BY: CHECKED: HRC  
BY:

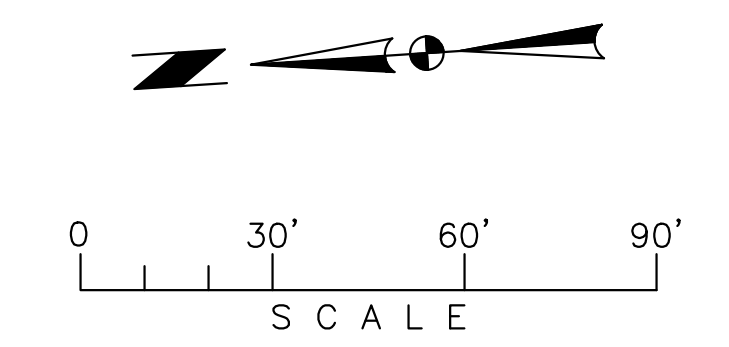
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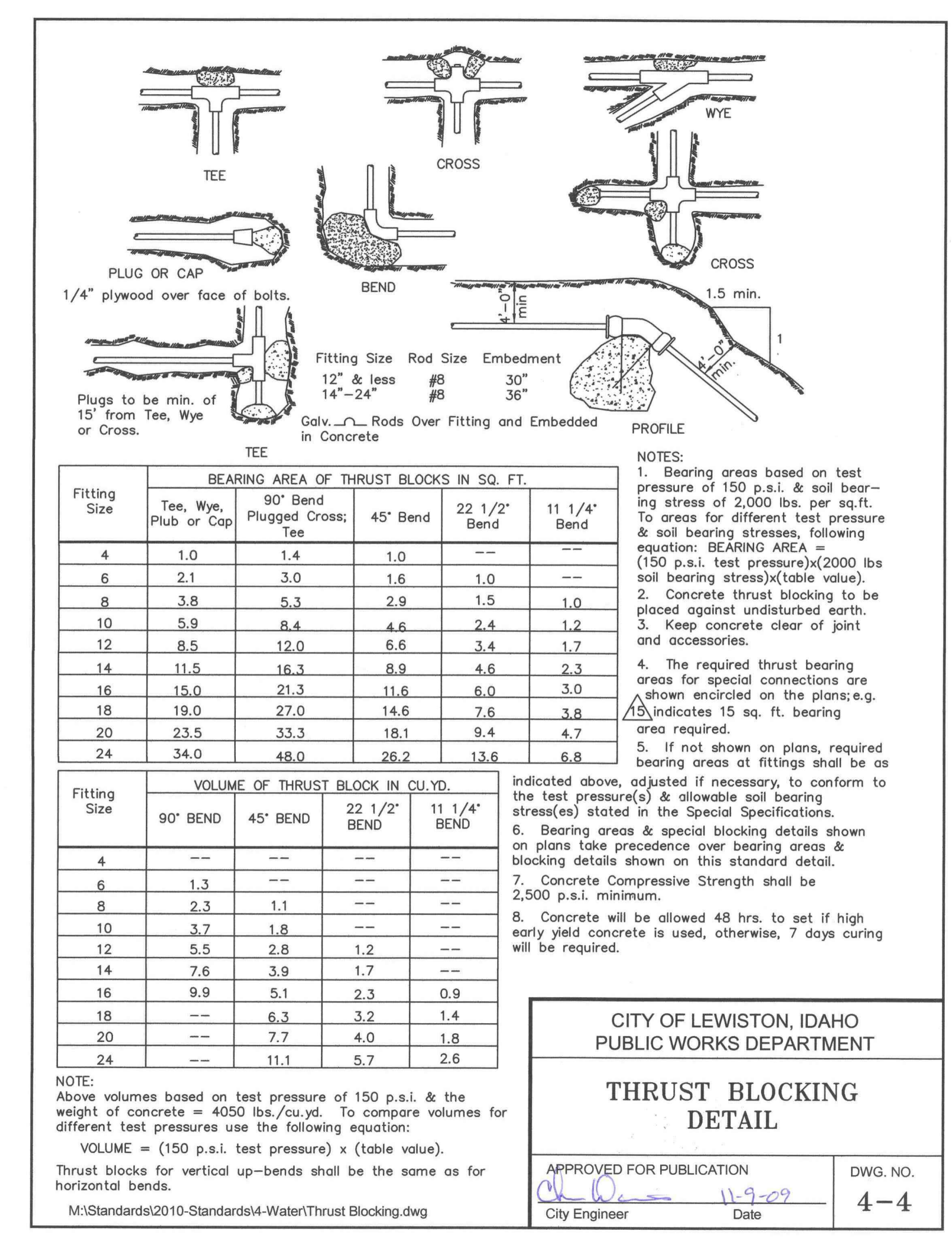
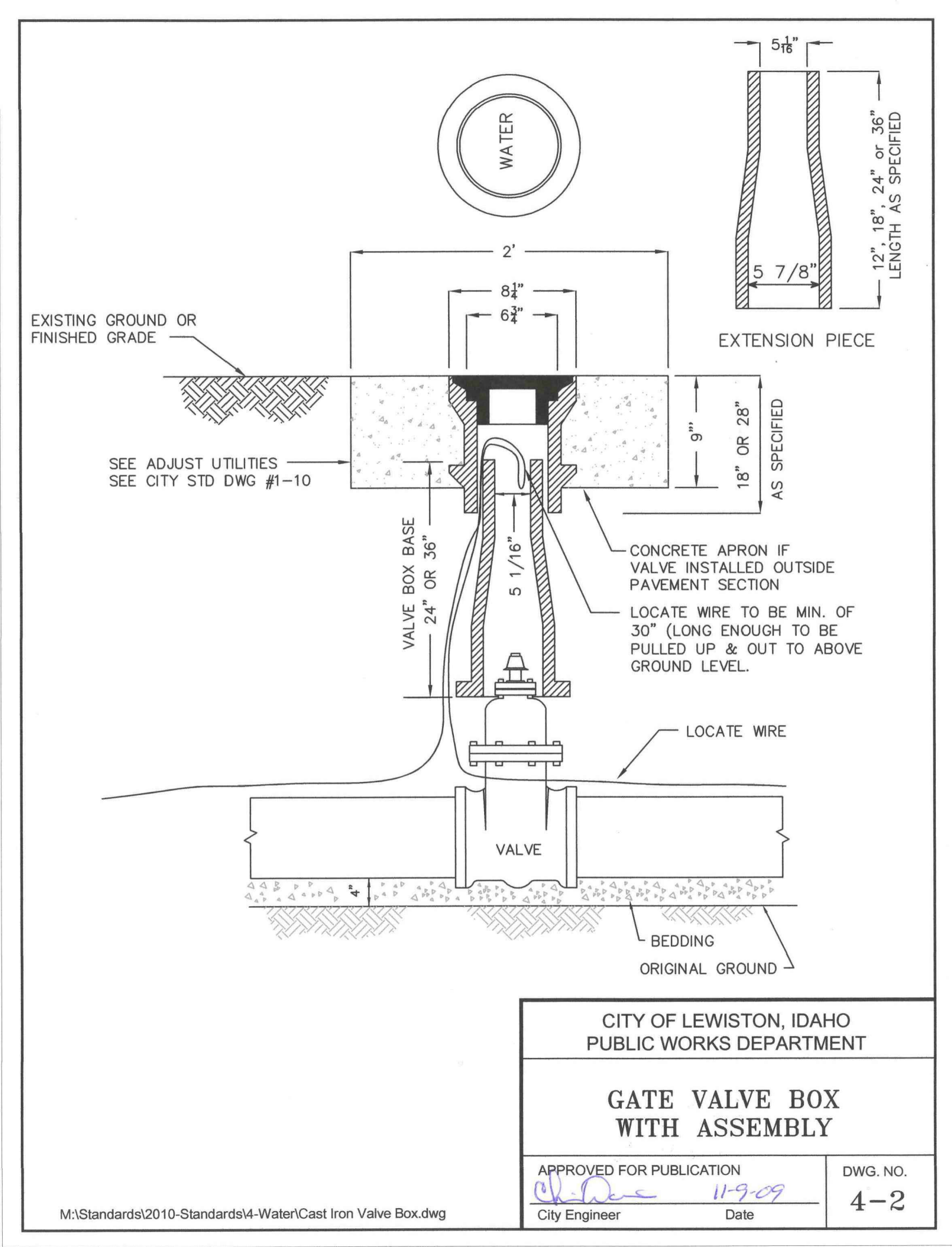
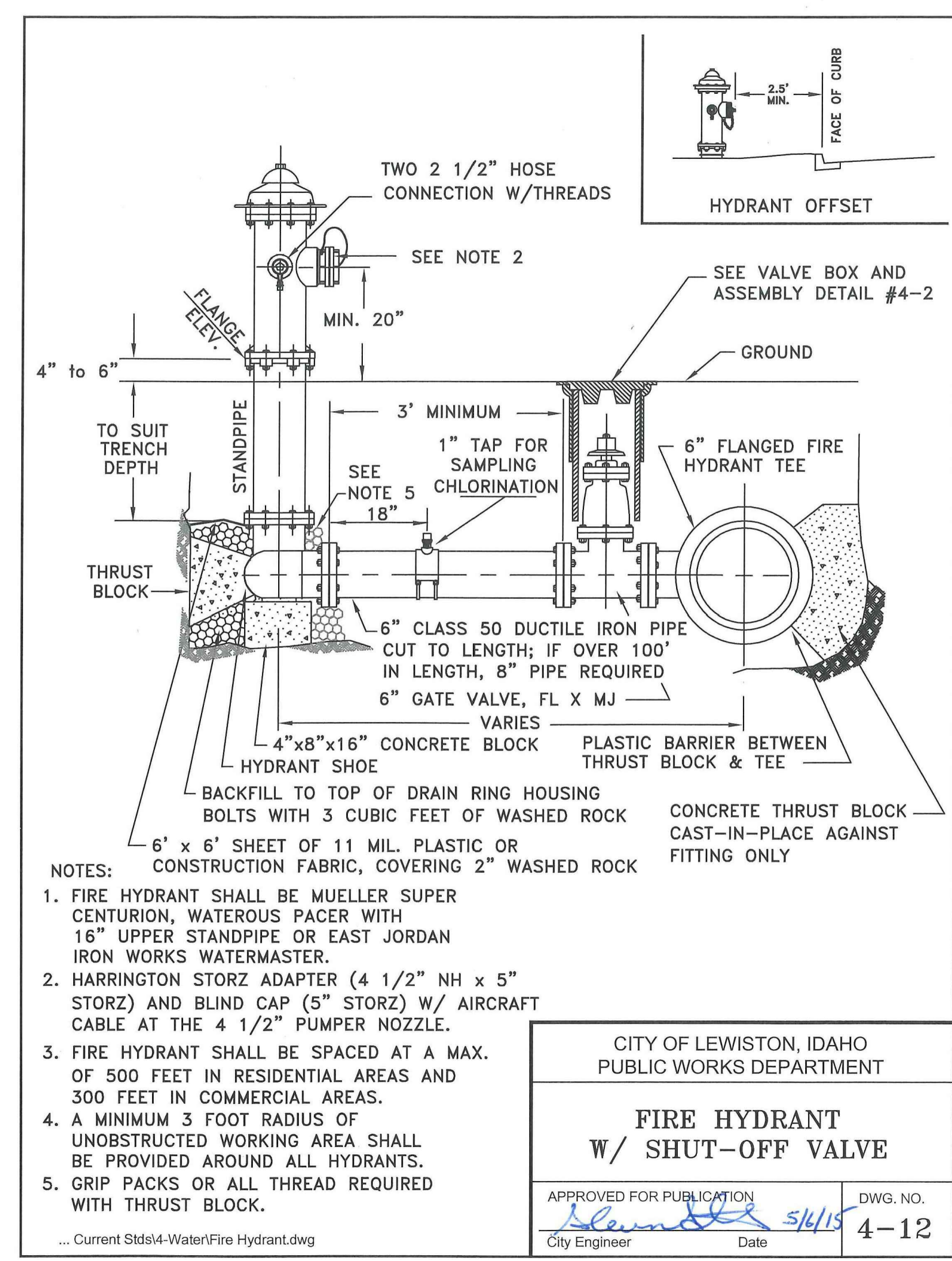
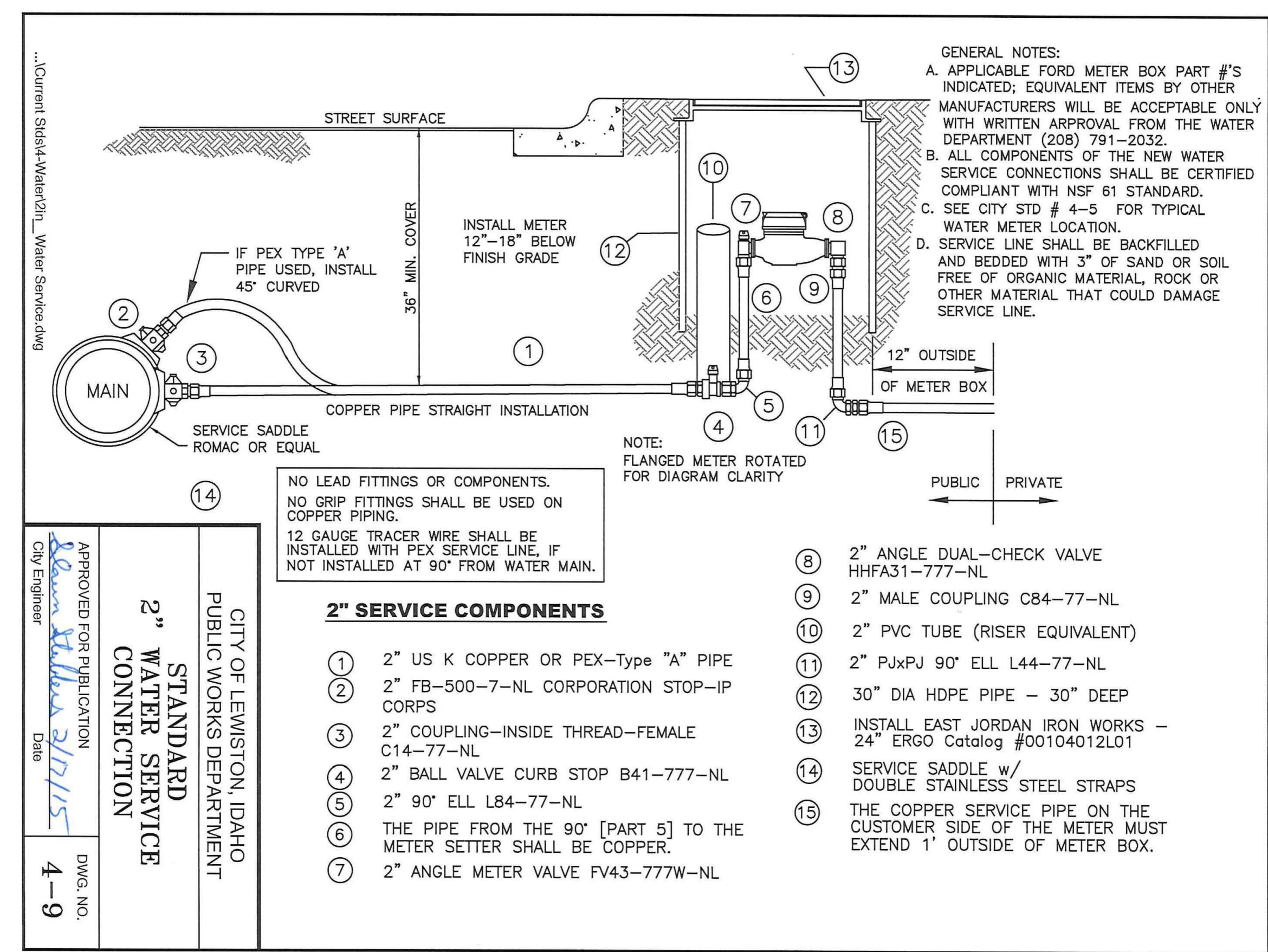
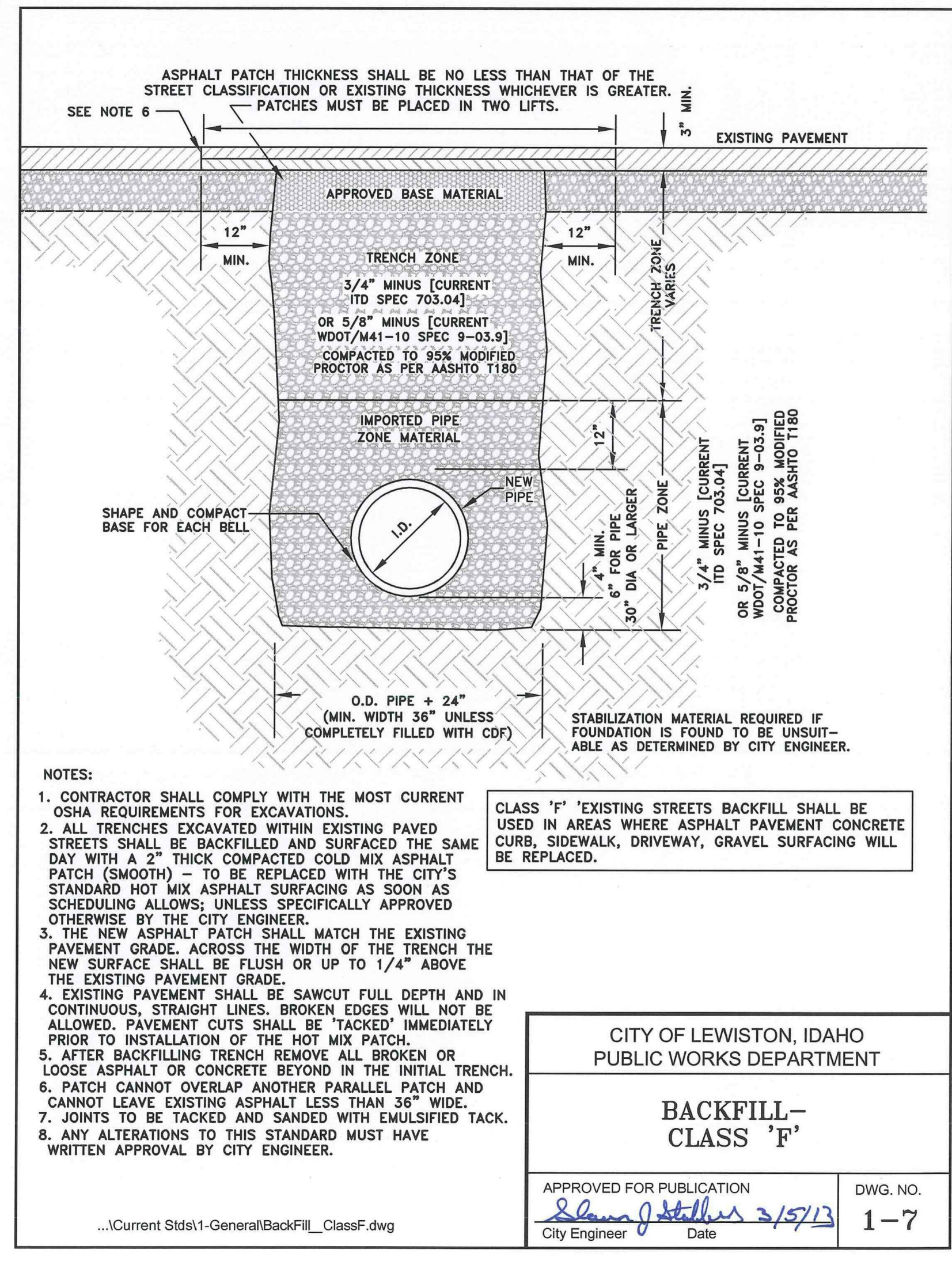
## NOTES

- REFER TO SHEET C2.0 FOR DEMOLITION WORK.
- REFER TO SHEET C4.0 FOR GRADING, STORMWATER DRAINAGE, AND SPOT ELEVATIONS.





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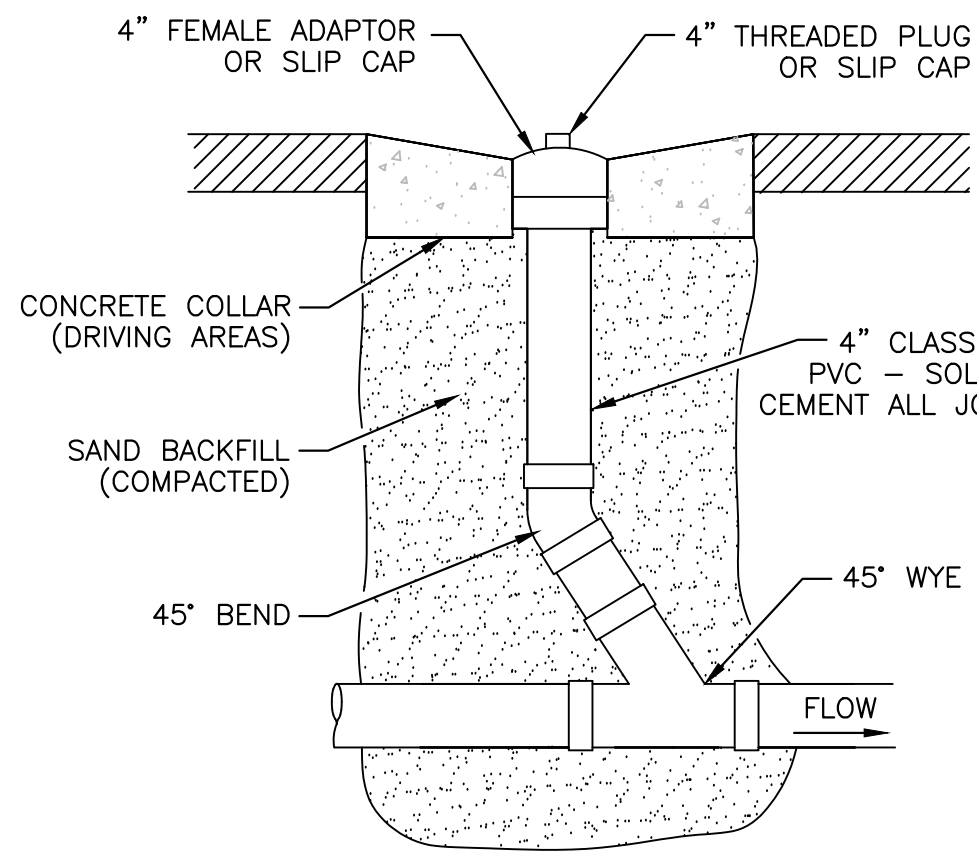
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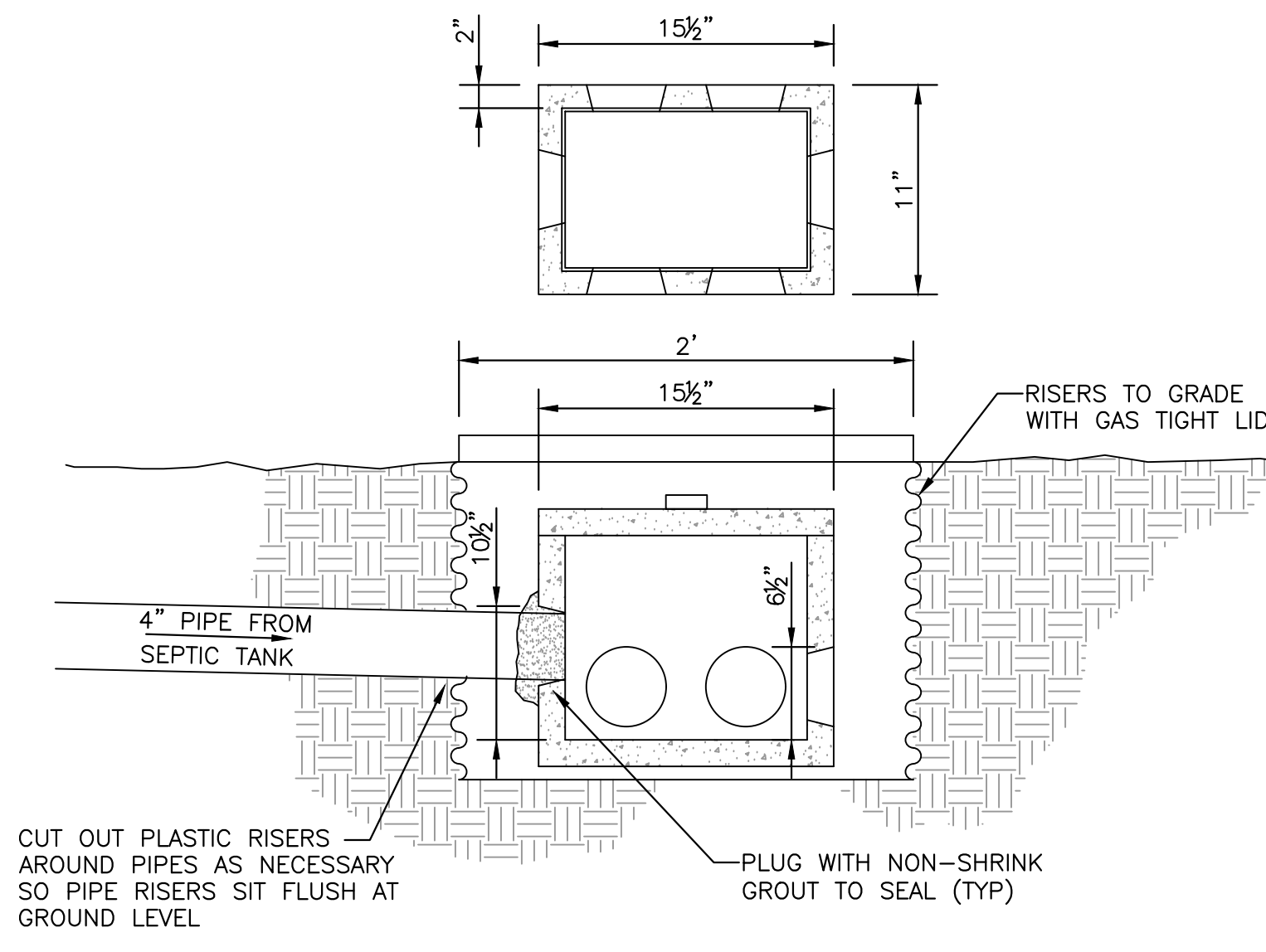
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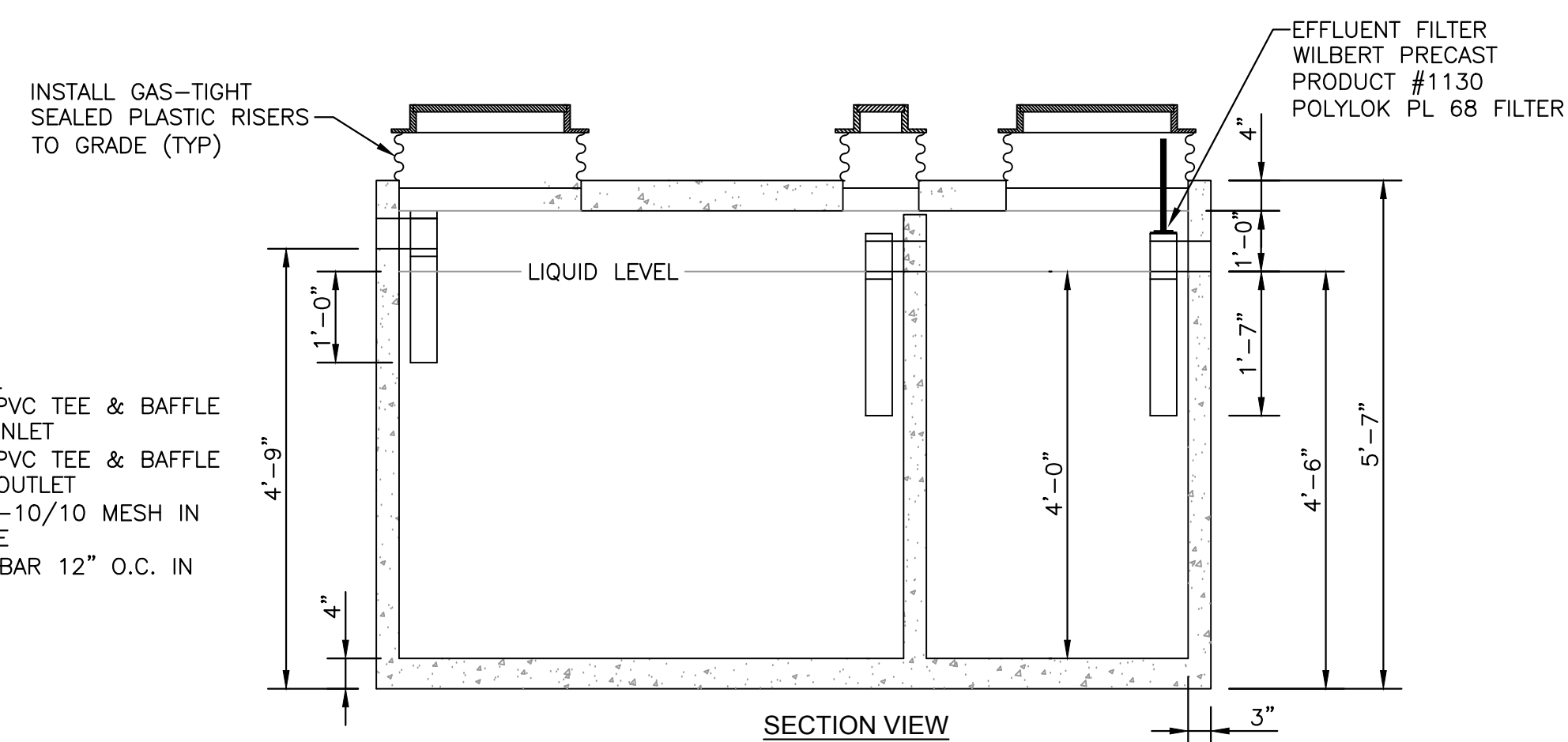
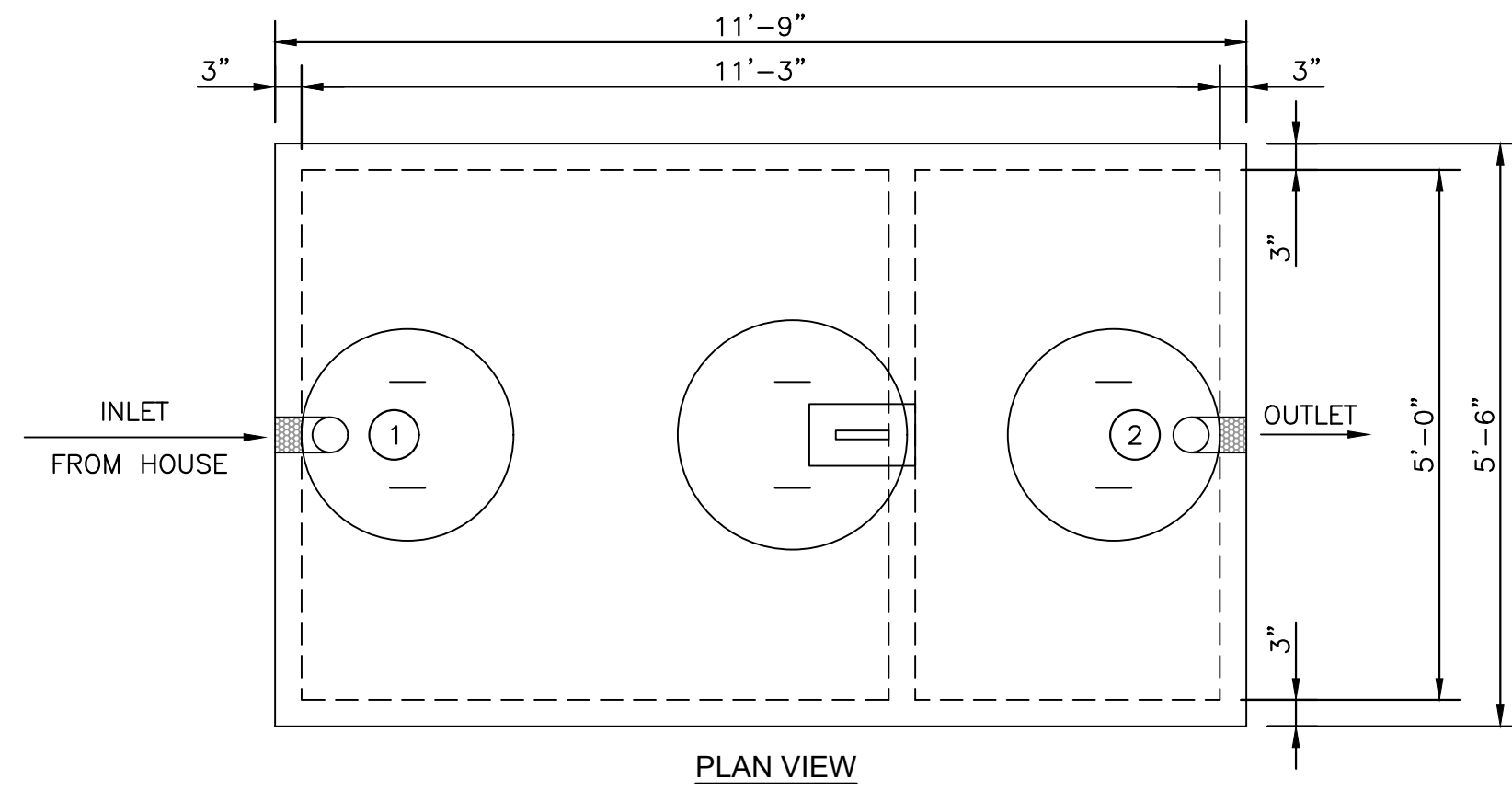
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**CLEANOUT DETAIL 1**  
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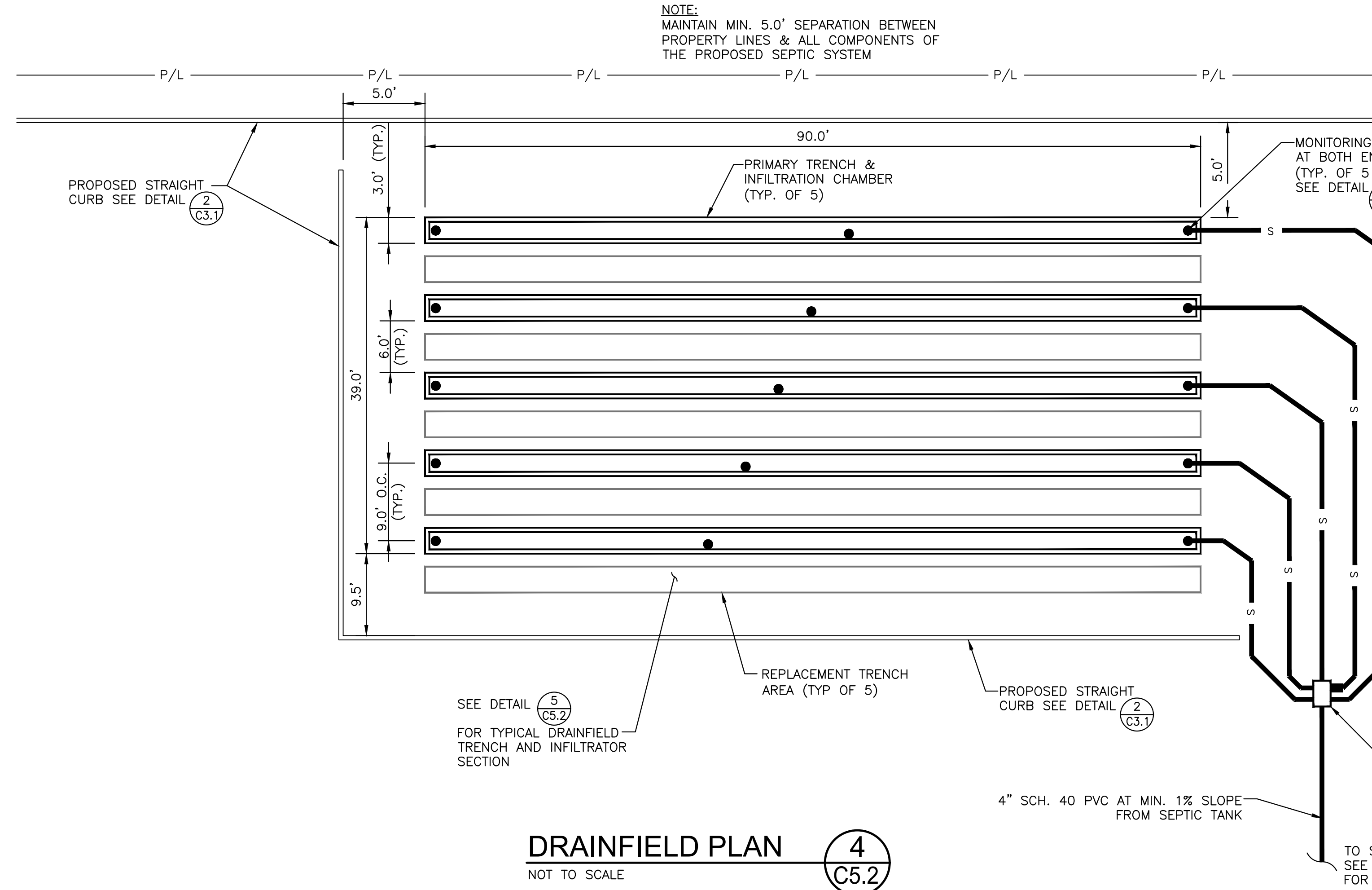


**WILBERT "D" BOX DETAIL 2**  
WILBERT PRECAST PRODUCT # 1651  
NOT TO SCALE

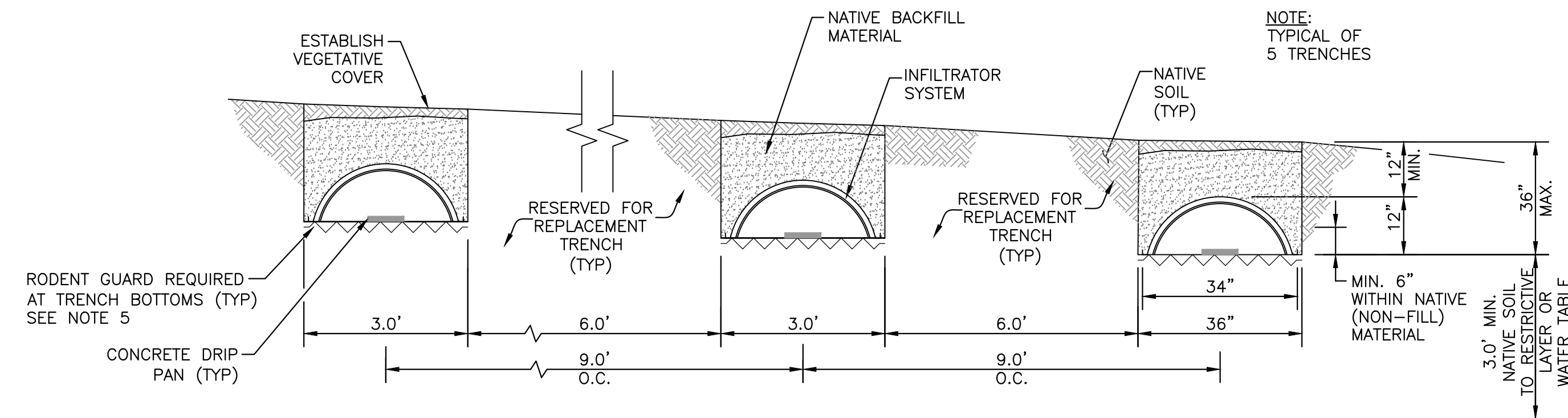


- NOTES:
- 4" PVC TEE & BAFFLE AT INLET
  - 4" PVC TEE & BAFFLE AT OUTLET
  - 6x6-10/10 MESH IN BASE
  - #4 BAR 12" O.C. IN TOP

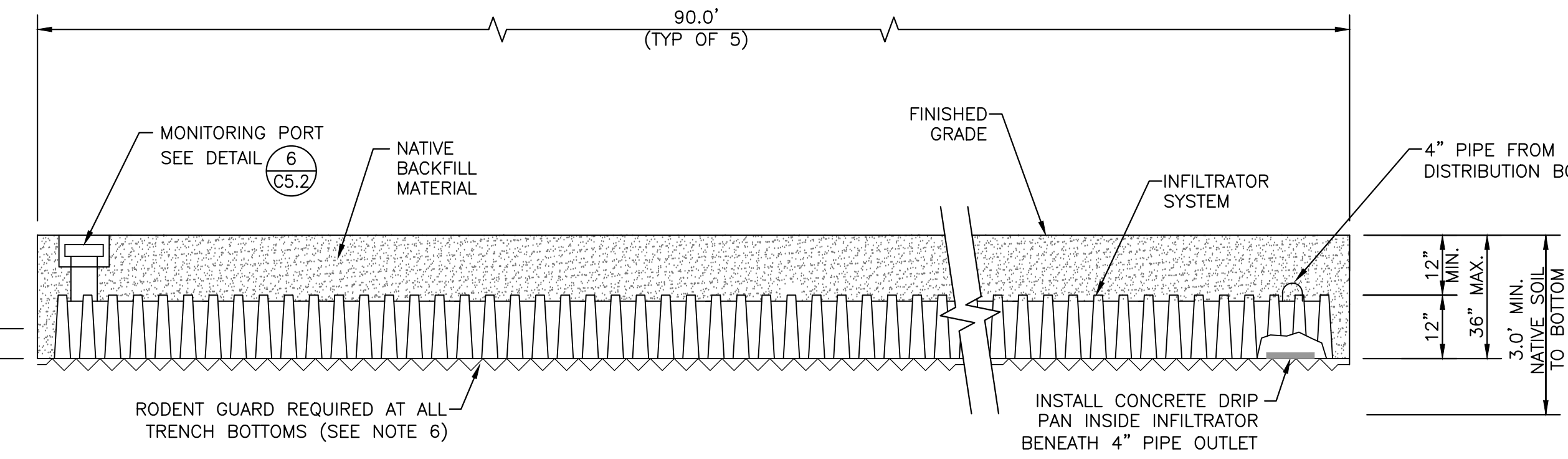
**1500 GALLON SEPTIC TANK - DOUBLE COMPARTMENT 3**  
WILBERT PRECAST PRODUCT # 1634M  
NOT TO SCALE



**DRAINFIELD PLAN 4**  
NOT TO SCALE



**TYPICAL DRAINFIELD TRENCH DETAILS 5**  
NOT TO SCALE



**MONITORING PORT DETAIL 6**  
NOT TO SCALE

**STANDARD TRENCH INSTALLATION NOTES:**

- EXCAVATE AND LEVEL INSTALLATION AREAS.
- CONSTRUCT TRENCHES PARALLEL TO EXISTING CONTOURS (LEVEL).
- SCARIFY SURFACE TO REMOVE ANY SMEARING CAUSED DURING EXCAVATION.
- INSTALL UNIVERSAL END CAP AND SECURE IN PLACE WITH BACKFILL.
- AVOID LARGE ROCKS OR DEBRIS IN COVER MATERIAL.
- CHICKEN WIRE FOR RODENT GUARD SHALL BE INSTALLED THE ENTIRE TRENCH LENGTH AND SHALL MEET THE FOLLOWING REQUIREMENTS:
  - 1" - 1 1/2" HEXAGON NETTING OR SQUARE NETTING
  - 34" - 36" WIDTH
  - GALVANIZED

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PROFESSIONAL ENGINEER  
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**SEPTIC DRAINFIELD DETAILS**

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CHECKED BY: HRC  
BY: \_\_\_\_\_

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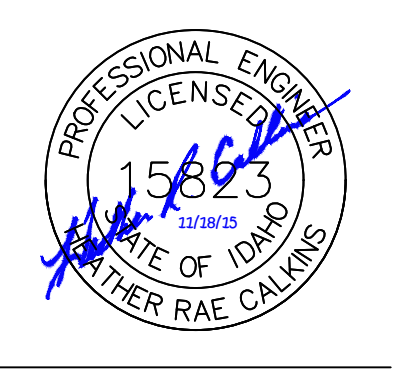
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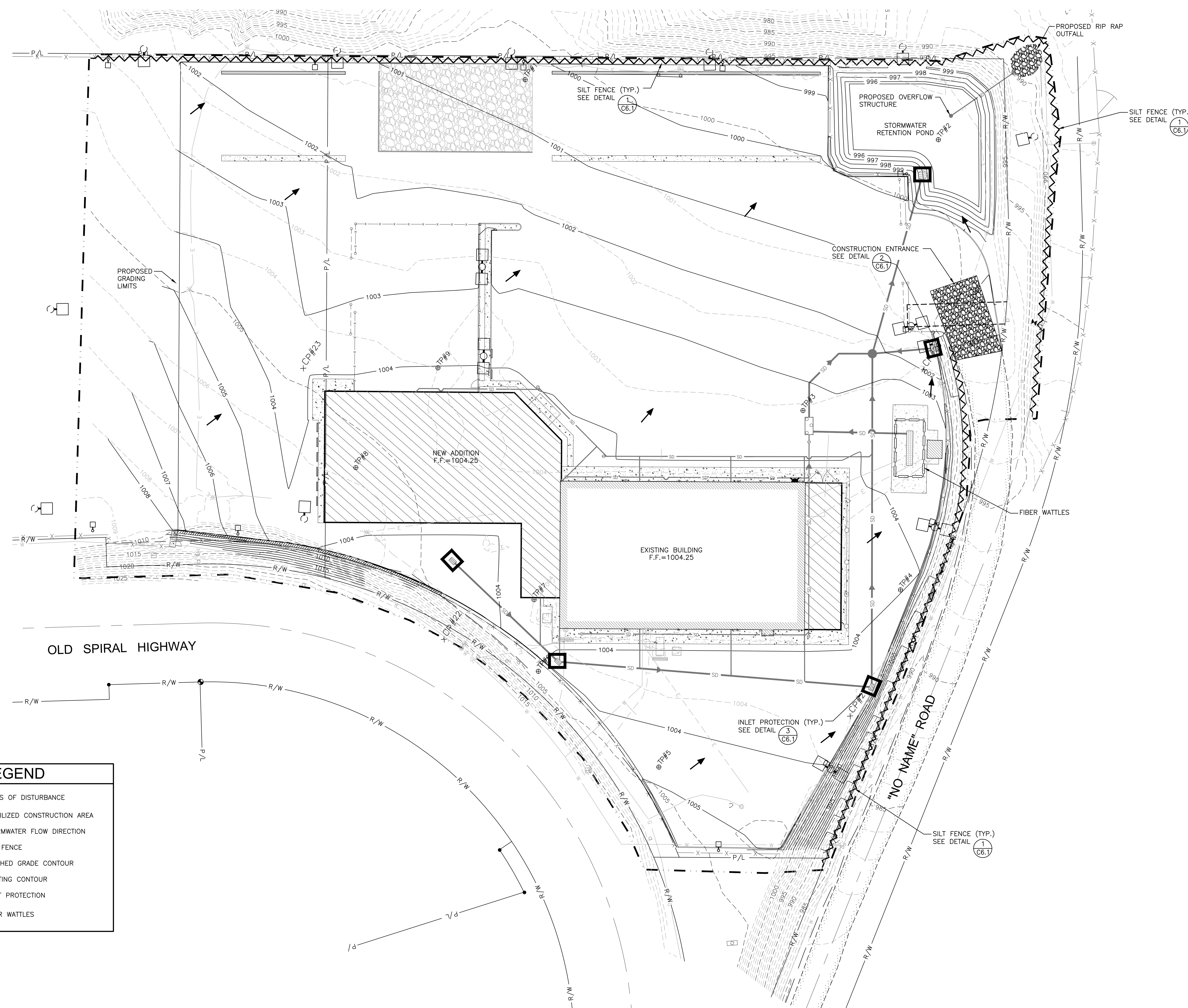
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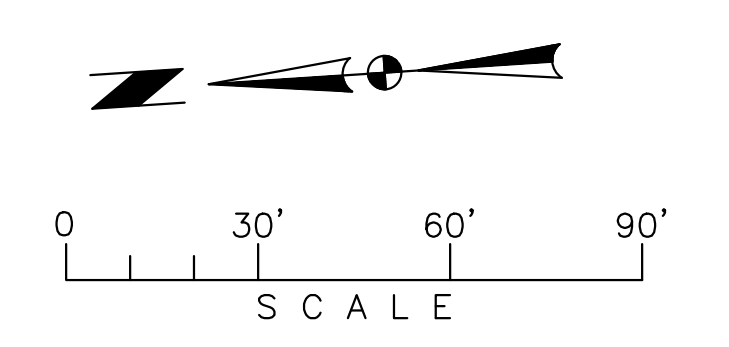
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**LEGEND**

- LIMITS OF DISTURBANCE
- STABILIZED CONSTRUCTION AREA
- STORMWATER FLOW DIRECTION
- SILT FENCE
- FINISHED GRADE CONTOUR
- EXISTING CONTOUR
- INLET PROTECTION
- FIBER WATTLES

NOTE:  
ITEMS TO BE DEMOLISHED ARE NOT SHOWN ON THIS PLAN FOR CLARITY





**RECORD DRAWINGS**  
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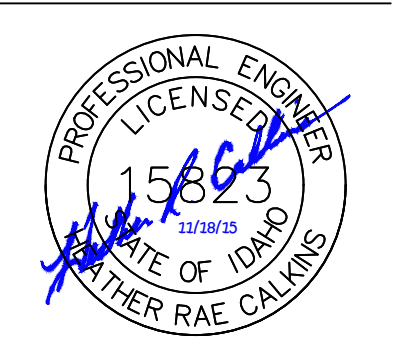
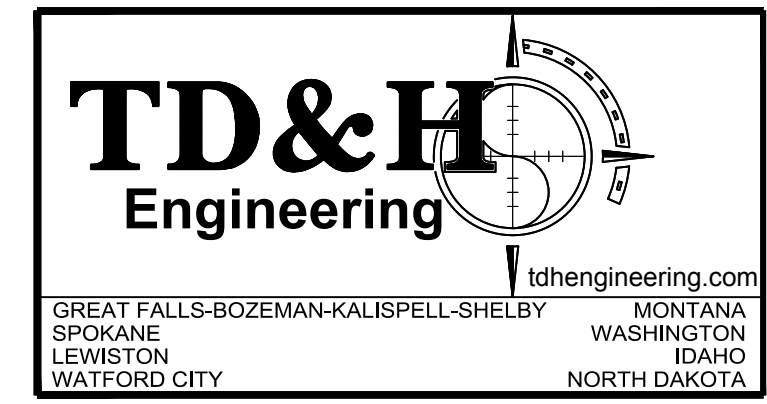
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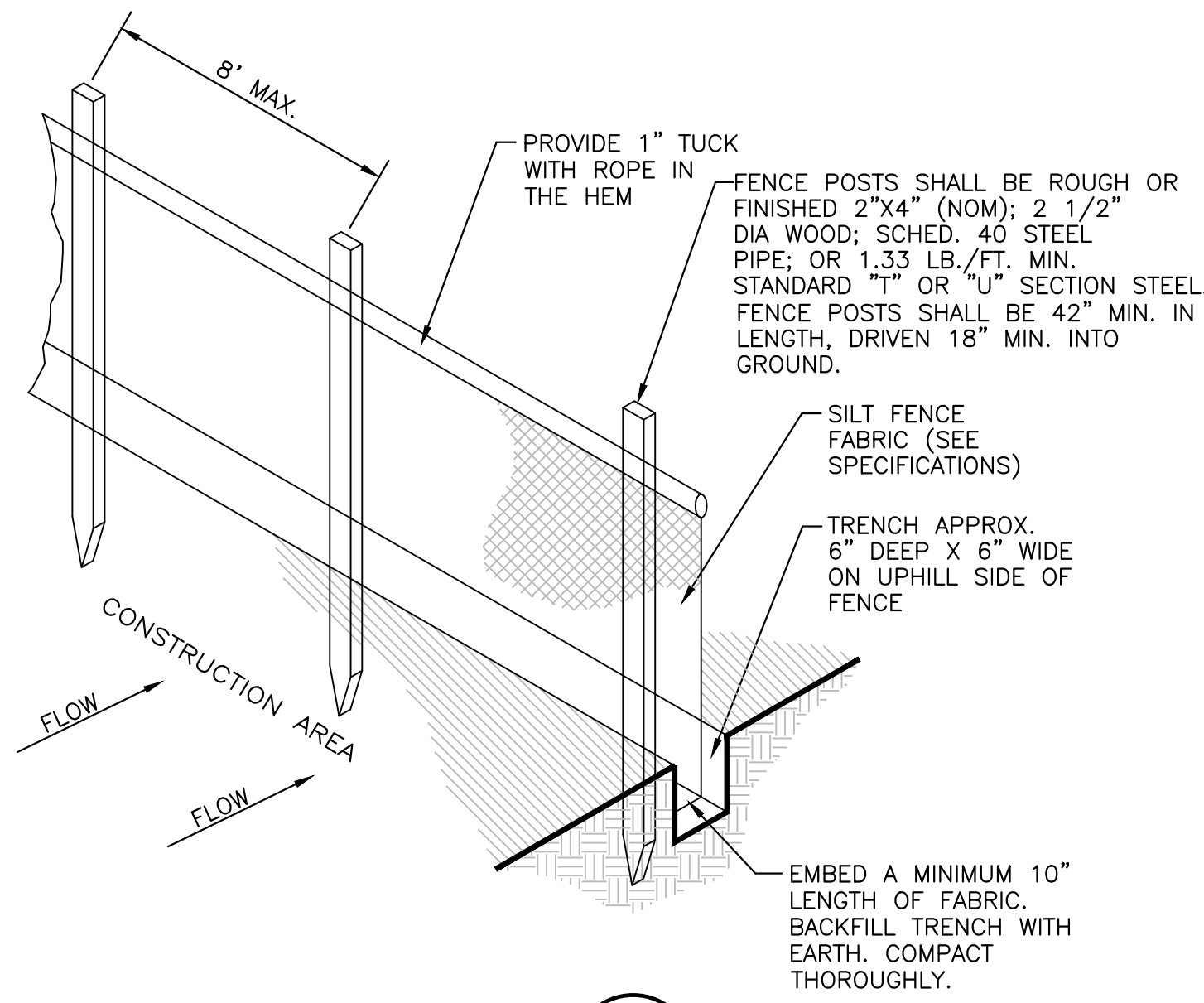
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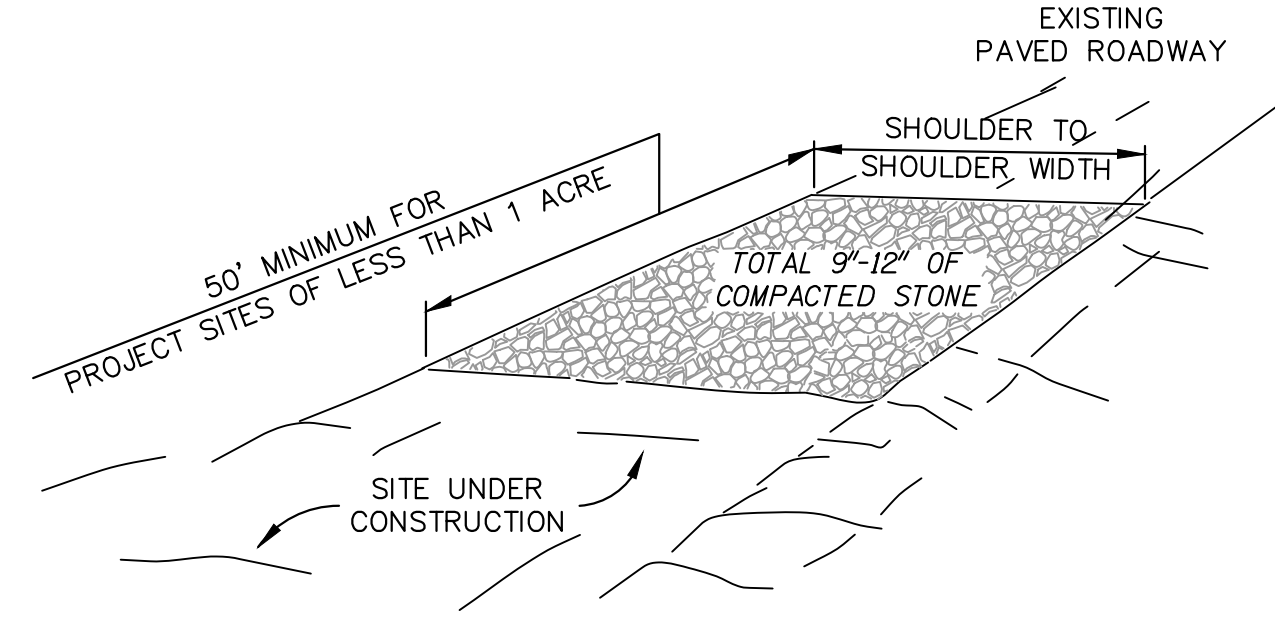
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**SILT FENCE NOTES:**

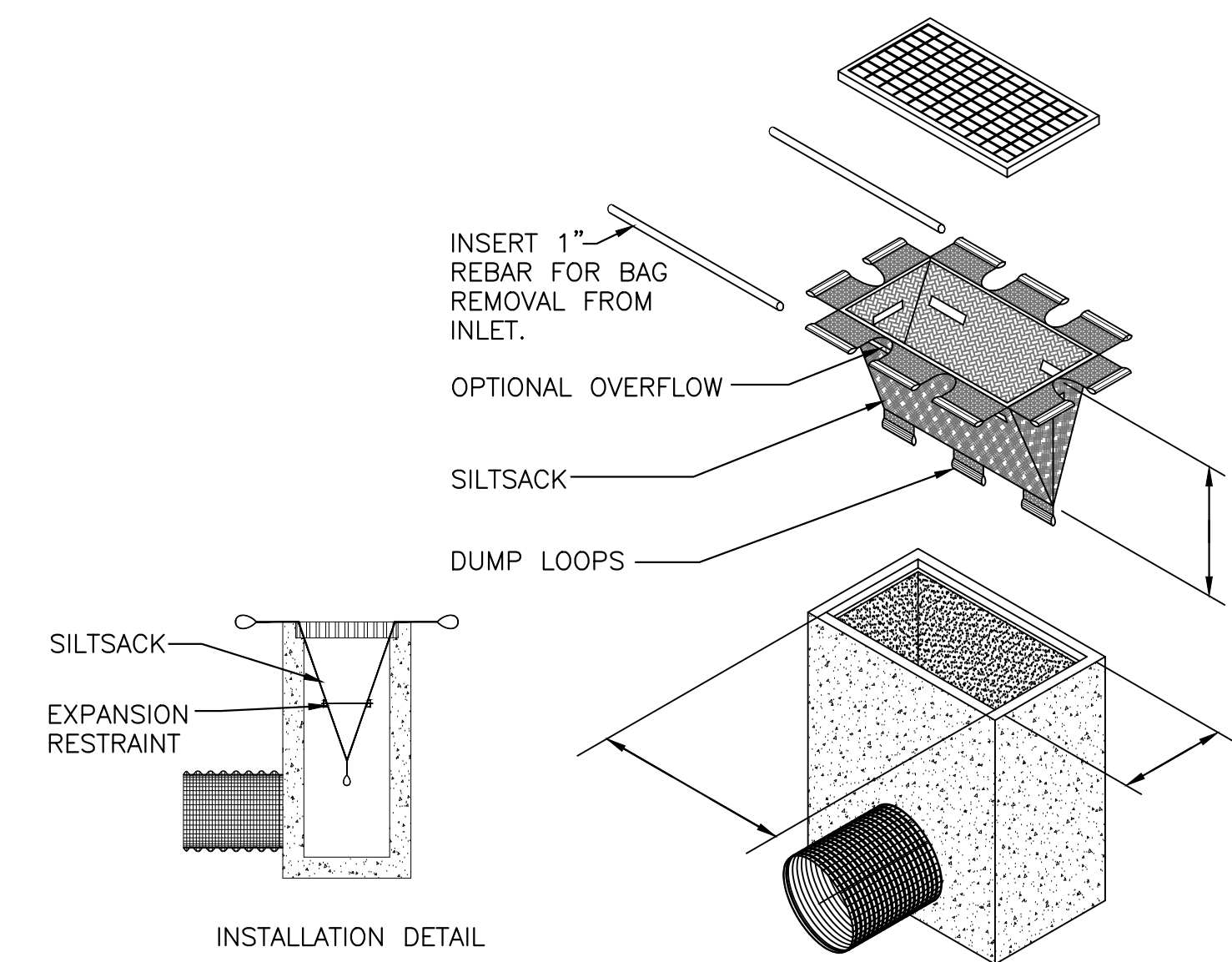
- SILT FENCE FABRIC TO BE FASTENED SECURELY TO STEEL FENCE POST BY USE OF WIRE TIES OR HOE RINGS. (3 FASTENERS PER POST), FOR WOODEN POSTS, FASTENERS SHALL BE NO. 17 GAGE STAPLES (3/4" WIDE X 1/2" LONG), SPACED EVENLY AT 5 PER POST OR NO. 14 GAGE NAILS (1" LONG WITH 3/4" BUTTON HEAD) SPACED EVENLY AT 4 PER POST.
- ENDS OF INDIVIDUAL ROLLS OF FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6" OVERLAP.



**SILT FENCE DETAIL** 1  
NOT TO SCALE C5.1



**CONSTRUCTION ENTRANCE** 2  
NOT TO SCALE C5.1



**SILT SACK INLET PROTECTION** 3  
NOT TO SCALE C5.1

**GENERAL MAINTENANCE & GUIDELINES**

- EROSION AND DUST CONTROL MEASURES MUST BE USED DURING CONSTRUCTION TO REDUCE OR ELIMINATE BLOWING DUST, EXCESSIVE RUNOFF, AND SOIL EROSION ACROSS PROPERTY LINES AND INTO STREETS AND RIGHT-OF-WAY, AND TO ELIMINATE TRACKING SOIL AND MUD ONTO STREETS FROM CONSTRUCTION EQUIPMENT AND VEHICLES. THE CONTRACTOR IS RESPONSIBLE FOR STREET CLEANUP AT THE END OF EACH SHIFT.
- IT IS IMPORTANT TO IMPLEMENT A THOROUGH MAINTENANCE PROGRAM BEFORE, DURING, AND AFTER DEVELOPMENT IS COMPLETED. INSPECT ALL BMPs AND ADDITIONAL SAFEGUARDS TO DETERMINE THAT THEY ARE WORKING PROPERLY AND TO ENSURE THAT PROBLEMS ARE CORRECTED AS SOON AS THEY DEVELOP. THE MAINTENANCE SCHEDULE SHOULD BE BASED ON SITE CONDITIONS, DESIGN SAFEGUARDS, CONSTRUCTION SEQUENCE, AND ANTICIPATED WEATHER CONDITIONS.
- INSPECTIONS SHOULD INCLUDE MATERIALS STORAGE AREAS, LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE, THE OPERATIONAL FUNCTIONALITY OF BMPs, AND EVIDENCE OF POLLUTANTS ENTERING THE DRAINAGE SYSTEM IN DISTURBED AREAS. AN INDIVIDUAL SHOULD BE ASSIGNED THE RESPONSIBILITY FOR ROUTINE CHECKS OF OPERATING PRACTICES. ALL TEMPORARY AND PERMANENT EROSION CONTROL BMPs SHOULD BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. SPECIAL ATTENTION SHOULD BE PAID TO CONTROLS AFTER STORM EVENTS TO ENSURE THEY ARE FUNCTIONING PROPERLY.
- AREAS TO HAVE PERMANENT SEEDING SHALL BE GRADED WITHIN A MINIMUM OF SIX INCHES OF TOPSOIL.

**POLLUTION CONTROL**

**EROSION & SEDIMENT CONTROL NOTES:**

**POLLUTION CONTROL MEASURES:** POLLUTION CONTROL MEASURES WILL BE ESTABLISHED AND SET IN PLACE PRIOR TO BEGINNING PROJECT CONSTRUCTION AND WILL BE MAINTAINED THROUGHOUT THE ENTIRE PROJECT CONSTRUCTION TIME PERIOD. THE PROPOSED POLLUTION CONTROL MEASURES ARE BASED ON IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY BEST MANAGEMENT PRACTICES (BMP'S) AND ARE LISTED AS FOLLOWS:

**STAGING AREAS:** THIS BMP INCLUDES MEASURES FOR COLLECTING RUNOFF FROM A STAGING AREA, MATERIALS STORAGE SITE, OR INDUSTRIAL ACTIVITY AREA OR FOR DIVERTING WATER FLOW AWAY FROM SUCH AREAS SO THAT POLLUTANTS DO NOT MIX WITH CLEAN STORMWATER RUNOFF. SEVERAL OPTIONS ARE AVAILABLE:

**STORMWATER CONVEYANCES:** THIS TERM INCLUDES MANY KINDS OF CHANNELS, GUTTERS, DRAINS, AND SEWERS.

**SPILL PREVENTION AND CONTROL:** THIS DESCRIBES METHODS OF MINIMIZING EXPOSURE OF POLLUTANTS TO STORM WATER RUNOFF BY ENCLOSING ANY DRIPS, OVERFLOWS, LEAKS, AND OTHER LIQUID MATERIAL RELEASES OR BY ISOLATING POLLUTANT SPILLS FROM STORMWATER RUNOFF. THREE POSSIBLE OPTIONS ARE DISCUSSED BELOW:

**CONTAINMENT DIKING:** TEMPORARY OR PERMANENT EARTH BERMS, CONCRETE BERMS, OR RETAINING WALLS DESIGNED TO HOLD SPILLS.

**CURBING:** LIKE CONTAINMENT DIKING, CURBING IS A BARRIER THAT SURROUNDS AN AREA OF CONCERN.

**DRIP PANS:** PANS USED TO CONTAIN VERY SMALL VOLUMES OF LEAKS, DRIPS, AND SPILLS.

**SOIL STABILIZATION PRACTICES**

**INTERIM AND PERMANENT STABILIZATION PRACTICES:** INTERIM STABILIZATION CONTROL PRACTICES WILL BE ESTABLISHED AND SET IN PLACE PRIOR TO BEGINNING PROJECT CONSTRUCTION AND WILL BE MAINTAINED THROUGHOUT THE ENTIRE PROJECT CONSTRUCTION TIME PERIOD. PERMANENT STABILIZATION PRACTICES SHALL BE CONSTRUCTED AT THE EARLIEST POSSIBLE TIME IN THE SEQUENCE OF PROJECT CONSTRUCTION ACTIVITIES. THE PROPOSED INTERIM AND PERMANENT STABILIZATION PRACTICES ARE BASED ON IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY BMP AND ARE LISTED AS FOLLOWS:

**TIMING OF CONSTRUCTION:** SCHEDULE AND SEQUENCE CONSTRUCTION WORK AND EROSION CONTROL APPLICATIONS SO THAT THEY OCCUR UNDER OPTIMAL CONDITIONS--THAT IS, DURING PERIODS WHEN THE POTENTIAL FOR EROSION IS LOWEST.

**PRESERVATION OF EXISTING VEGETATION:** PROTECT EXISTING VEGETATION (INCLUDING TREES, GRASSES, AND OTHER PLANTS) BY PREVENTING DISTURBANCE OR DAMAGE TO SPECIFIED AREAS OF A CONSTRUCTION SITE OR RIGHT-OF-WAY.

**CLEARING LIMITS:** MINIMIZE THE TOTAL AMOUNT OF BARE SOIL EXPOSED TO EROSION FORCES BY (1) CONTROLLING THE AMOUNT OF GROUND THAT IS CLEARED AND GRUBBED AT ONE TIME IN PREPARATION FOR CONSTRUCTION, AND (2) LIMITING THE AMOUNT OF TIME THAT BARE GROUND MAY REMAIN EXPOSED BEFORE SLOPE PROTECTION OR STABILIZATION MEASURES ARE PUT INTO PLACE.

**STABILIZATION OF CONSTRUCTION ENTRANCE ROADS:** A TEMPORARY SEDIMENT REMOVAL DEVICE--NORMALLY A PAD OF CRUSHED ROCK OR STONE--CAN BE INSTALLED AT THE APPROACH FROM A CONSTRUCTION SITE TO A PUBLIC ROADWAY, TO STABILIZE THE ROAD.

**DUST CONTROL:** THIS DESCRIBES PRODUCTS OR MEASURES USED FOR REDUCING OR PREVENTING WIND EROSION BY PROTECTING THE SOIL SURFACE, ROUGHENING THE SURFACE REDUCING THE SURFACE WIND VELOCITY. SEVERAL DUST CONTROL TREATMENTS ARE DESCRIBED BELOW. OTHER METHODS ARE ALSO AVAILABLE.

**VEGETATIVE COVER:** FOR DISTURBED AREAS NOT SUBJECT TO TRAFFIC, VEGETATION PROVIDES THE MOST PRACTICAL METHOD OF DUST CONTROL.

**MULCH (INCLUDING GRAVEL MULCH):** WHEN PROPERLY APPLIED, MULCH OFFERS A FAST, EFFECTIVE MEANS OF CONTROLLING DUST.

**SPRINKLING:** THE SITE MAY BE SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. SPRINKLING IS ESPECIALLY EFFECTIVE FOR DUST CONTROL ON HAUL ROADS AND OTHER TRAFFIC ROUTES.

**STONE:** STONE OR GRAVEL USED TO STABILIZE CONSTRUCTION ROADS AND DISTURBED SOILS CAN ALSO BE EFFECTIVE FOR DUST CONTROL AND REDUCE SOIL LOSSES FROM THOSE AREAS BY UP TO 80 PERCENT.

**SURFACE ROUGHENING:** TILLING OR DISCING THE SURFACE OF DISTURBED SOILS TO PRODUCE A ROUGH SURFACE OR RIDGES WHICH WHEN PERPENDICULAR TO PREVAILING WINDS CAN REDUCE SOIL LOSSES DUE TO WIND BY 80 PERCENT.

**BARRIERS:** A BOARD FENCE, WIND FENCE, SEDIMENT FENCE, OR SIMILAR BARRIER CAN CONTROL AIR CURRENTS AND BLOWING SOIL.

**SEEDING:** PERMANENT SEEDING MEANS GROWING A LONG-TERM OR PERMANENT VEGETATIVE COVER (PLANTS) ON DISTURBED AREAS OR AREAS THAT NEED ASSISTANCE IN REVEGETATION.

**PERMANENT STORM WATER SYSTEM:** THE NEW CONSTRUCTION SITE WILL INCLUDE NEW PERMANENT CURB, GUTTER AND STORMWATER PIPING FOR COLLECTION AND CONVEYANCE OF ALL STORMWATER RUNOFF TO EXISTING STORMWATER SYSTEMS.

**KENWORTH SALES COMPANY, INC.**  
1643 OLD SPIRAL HIGHWAY  
LEWISTON, IDAHO

PROJECT:  
SHEET TITLE:

**REVISIONS**

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NO. DATE: 09-10-15  
DRAWN: KJM  
BY: CHECKED: HRC  
BY:

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**C6.1**

EROSION CONTROL DETAILS