

(MARINE LUMBER CO.)

DOC. NO. 2006-083653
(TUALATIN YARDS, LLC)

Architectural Review: Hedges D is a proposed new one-story building "shell" intended for a high-tech industrial tenant with a possible mezzanine addition by TI permit. Project uses include office, light manufacturing, and warehouse. A Certificate of Occupancy first requires a separate permit for TI work. The building will be a steel roof structure with concrete walls and slab-on-grade floor construction. A future mezzanine would be steel and concrete composite construction.

Project Statistics and Notes:
ZONING DISTRICT: GENERAL MANUFACTURING (MG)
INDUSTRIAL BUSINESS PARK OVERLAY
TAX PARCEL NO.: R 219850, R 219851 Property ID 251278A-00800 Map Tax Lot

LEGAL DESCRIPTION: Lot 12, Franklin Business Park No. 6, in the City of Tualatin, County of Washington and State of Oregon, a subdivision recorded August 24, 2016, Recording no. 2016-067801. Together with access rights over and across private road as described in Declaration of Access Easement recorded July 8, 2011, Recording no. 2011-047430.

STATISTICS:

| BUILDING AREAS: | OSSC Bldg. Gross Area | Gross Floor Area |
|-------------------------------|-----------------------|-------------------------------------|
| 1 st Floor-N. Wing | 35,988sf | 35,048sf |
| 1 st Floor-S. Wing | 26,212 | 25,452 |
| Loading Area | 4,687 | 4,647 |
| Mezzanine (as TI) | 0 | 11,725 (projected for calculations) |
| Total | 66,887sf | 76,872sf |

MIXED USE PERCENTAGE (SECTION 69.065): (gross floor area)
Manufacturing: 60,000sf (78%)
Office: 16,872sf (22%)

SITE: 4.998 Acre Lot 12 (Developable portion of site)
4.449 Acre Tract D (Sensitive Area / Vegetated Corridor)
9.447 Acre Total (411,511sf)
Bldg. Coverage 16.3%

PARKING:
REQUIRED: (use gross floor area)
Manufacturing 60,000 x 1.6/1,000 = 96 minimum
Commercial Office 16,872 x 2.7/1,000 = 46 minimum
PROVIDED: 275 Stalls (3,521,000sf - no maximum in manuf.)
REQUIRED ADA: 6
PROVIDED ADA: 7
REQUIRED VAN POOL: 142 req'd / 25 = 5.68
PROVIDED VAN POOL: 7

BIKE PARKING: (use gross floor area)
REQUIRED: 76,872sf x 0.1/1,000 = 7.69 (5 covered)
PROVIDED: 8 (all covered)

TRASH ENCLOSURE AREA CALCULATIONS: (use gross leasable floor area)
REQUIRED:
Basic Minimum: 10sf
Industrial: 60,000sf x 6/1,000 = 360sf
Office: 16,872sf x 4/1,000 = 67sf
Total Required = 427sf
PROVIDED: 600sf (two enclosures @ 300sf)

LANDSCAPE CALCULATIONS:
REQUIRED: minimum is 12.5% of area to be developed:
12.5% x 217,713sf (Lot 12) = 27,214sf minimum
PROVIDED: 29,716sf on Lot 12 (plus 193,799sf on Tract D)

Project Team:

Owner / Developer: Hedges D, an LLC
PO Box 15523
Seattle, WA 98115
Contact: Mac Martin
Phone: (206) 399-6676

Shell Architect / Entitlement Permit Coordination: Lance Mueller & Associates / Architects
130 Lakeside Ave., Suite 250
Seattle, WA 98122
Contact: Bob Wells
Phone: (206) 325-2553 x 120

Civil Engineer: Mackenzie
P O Box 15523
Portland, OR 97239
Contact: Greg Mino
Phone: (503) 224-9560

Structural Engineer: VLAK Engineering + Design
3533 SW Kelly Avenue
Portland, OR 97239
Contact: Trent Nagle
Phone: (503) 222-4453

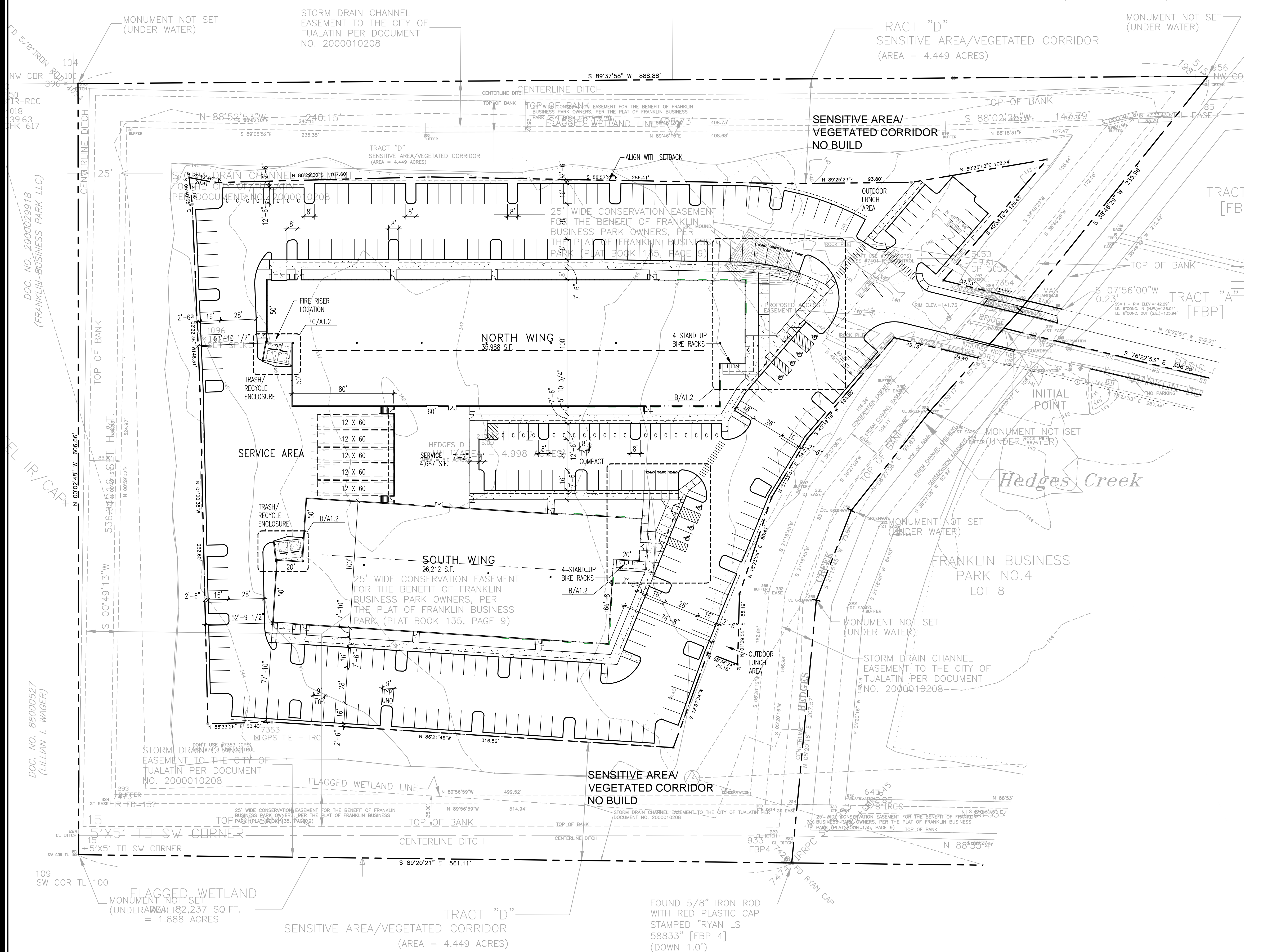
Landscaping Architect: Otten Landscape Architects
3933 SW Kelly Ave., Suite B
Portland, OR 97239
Contact: Janet Otten
Phone: (503) 972-0311

Geotechnical Engineer: GeoEngineers
1200 NW Naito Parkway, Suite 180
Portland, OR 97209
Contact: Greg Landau
Phone: (503) 624-9274

Jurisdiction: City of Tualatin
PO Box 363
18676 SW Martinazzi Ave.
Tualatin, OR 97062

SHEET INDEX

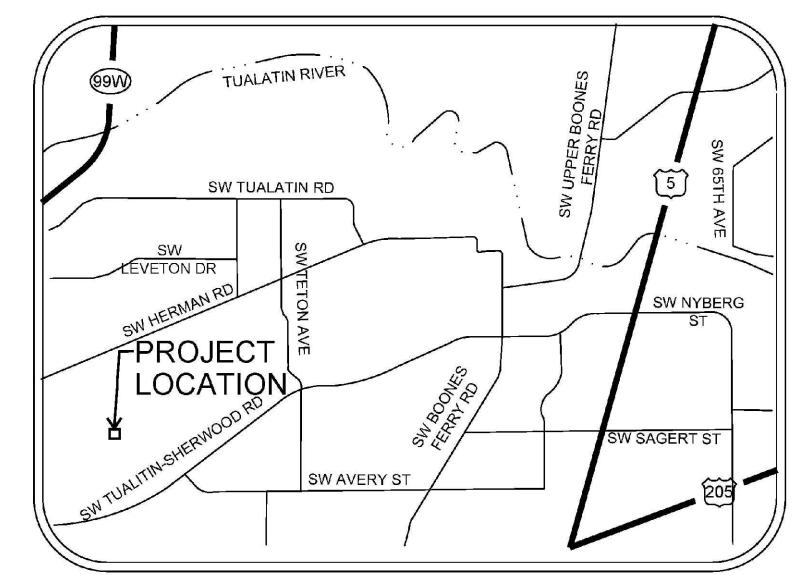
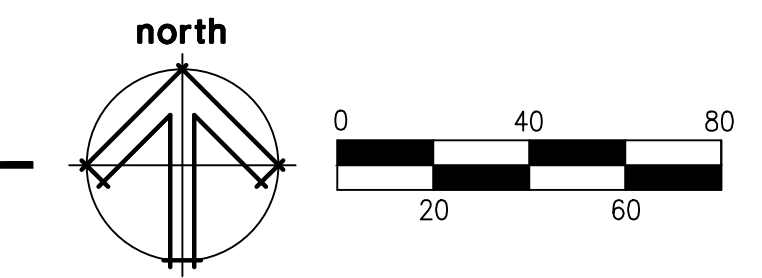
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 - L2.0 - OUTLINE SPEC AND DETAILS



SITE PLAN

SCALE: 1" = 40'

NOTE:
REFER TO LIGHTING CALCULATION SHEET 1 OF 2 FOR SITE LIGHTING.



SITE PLAN & NOTES

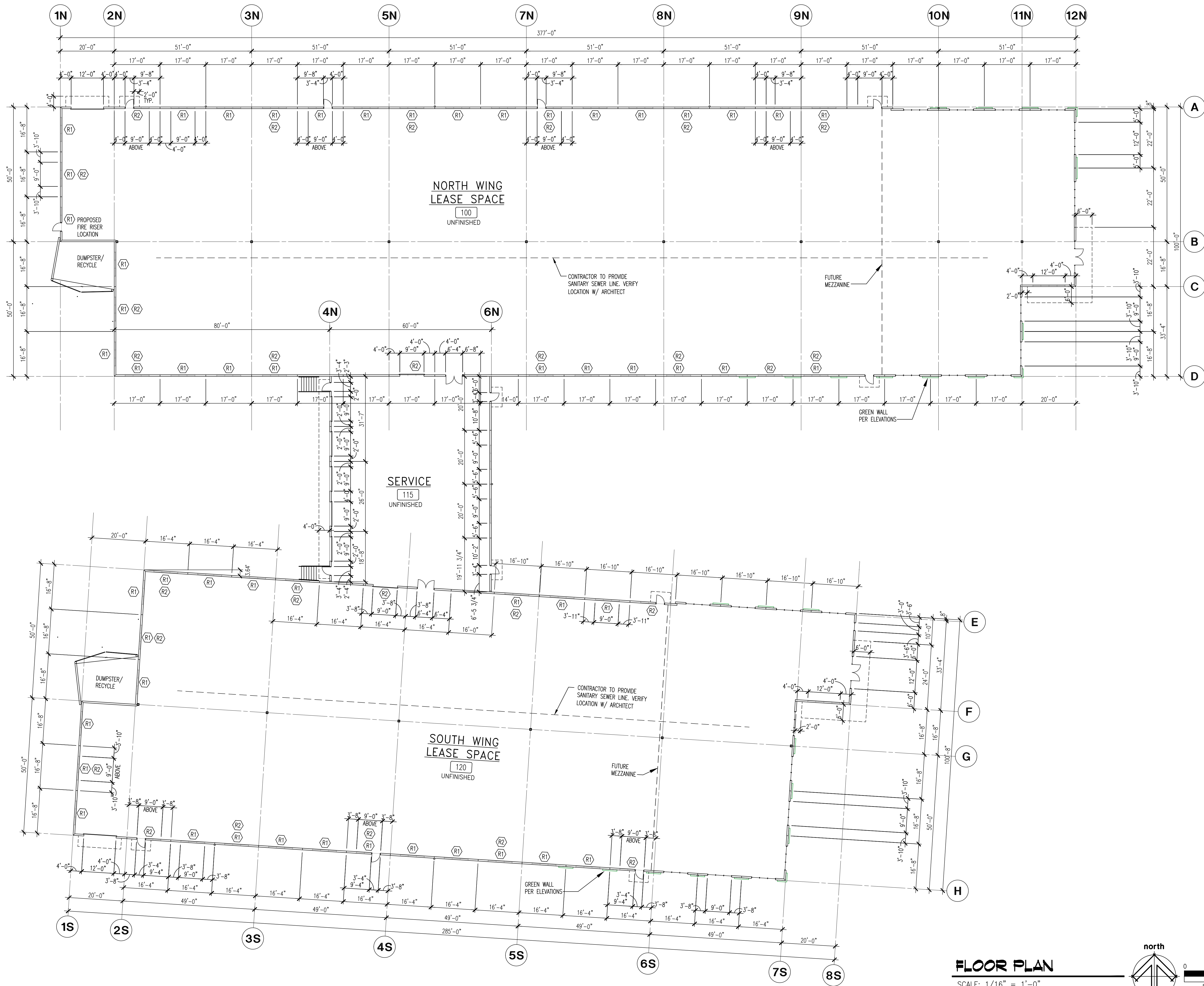
LANCE MUELLER & ASSOCIATES

ARCHITECTS
130 LAKESIDE • SUITE 250 • SEATTLE, WA 98122 • (206) 325-2553

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| 15-002 | job no. | EM | drawn | BY | checked | 12-16-19 | revision |
| 12-16-19 | DATE | 12-16-19 | DATE | 12-16-19 | DATE | 12-16-19 | DATE |

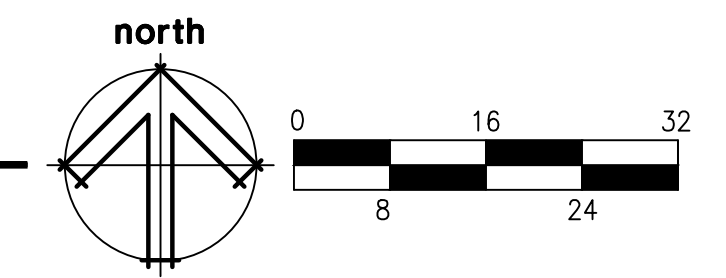
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FLOOR PLAN

SCALE: 1/16" = 1'-0"



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| 18-002 | job no. | 12-16-19 | date |
| | drawn | | |
| | checked | | |
| | no. | | |
| | revision | | |
| REGISTERED ARCHITECT | | STATE OF OREGON | |
| LANCE MUELLER | | SEATTLE, WA 98101 | |
| 12-16-19 | | date | |
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| AS SUBMITTAL | | revision | |

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 12XX SW 115TH STREET
 TUALATIN, OREGON 97062

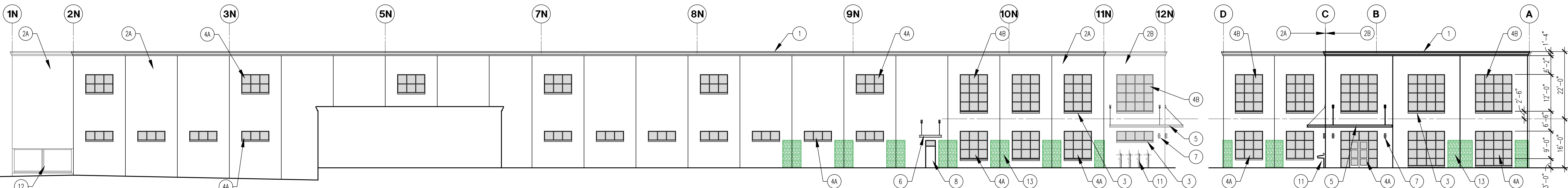
FLOOR PLAN

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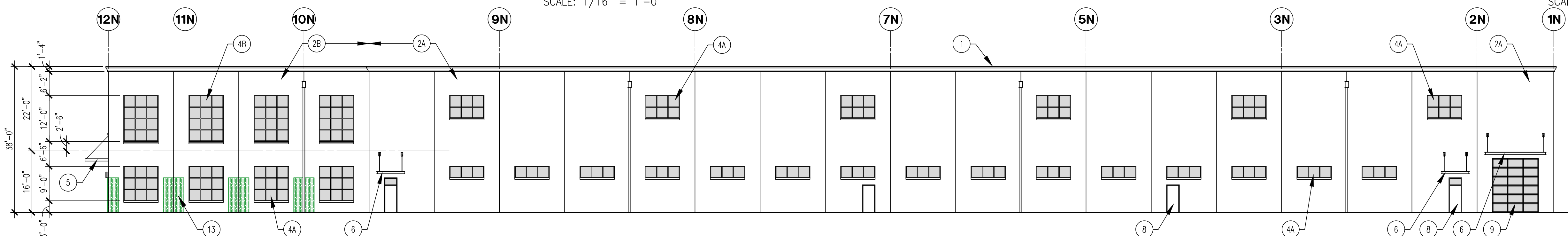


SOUTH ELEVATION - NORTH WING

EAST ELEVATION - NORTH WING

SCALE: 1/16" = 1'-0"

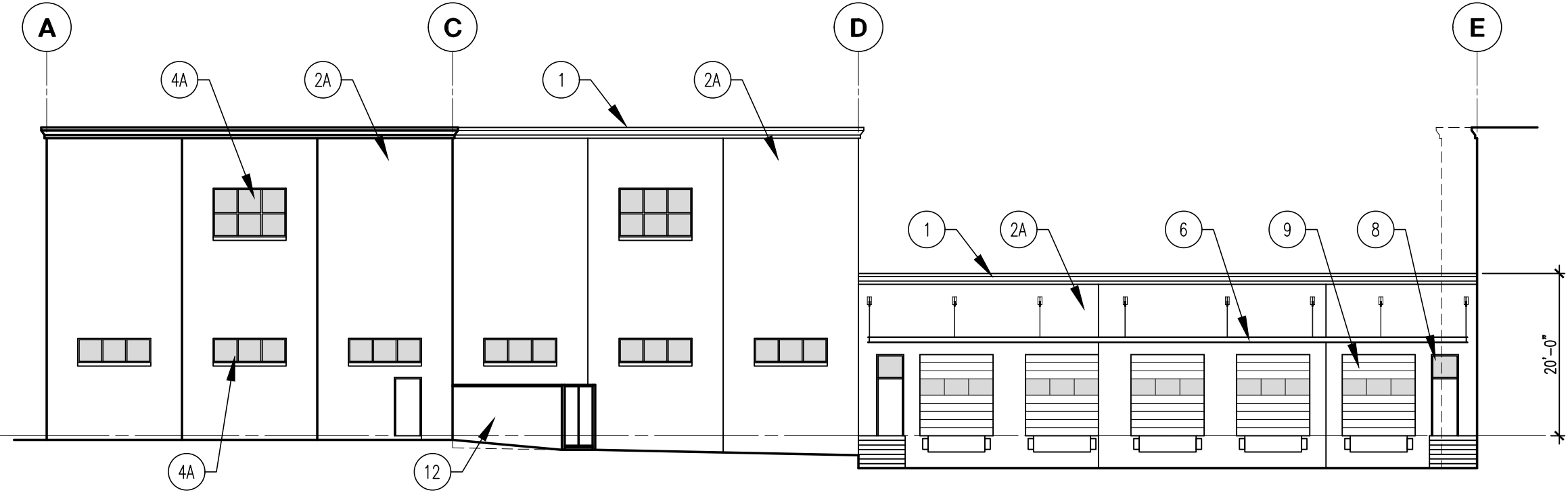
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NORTH ELEVATION - NORTH WING

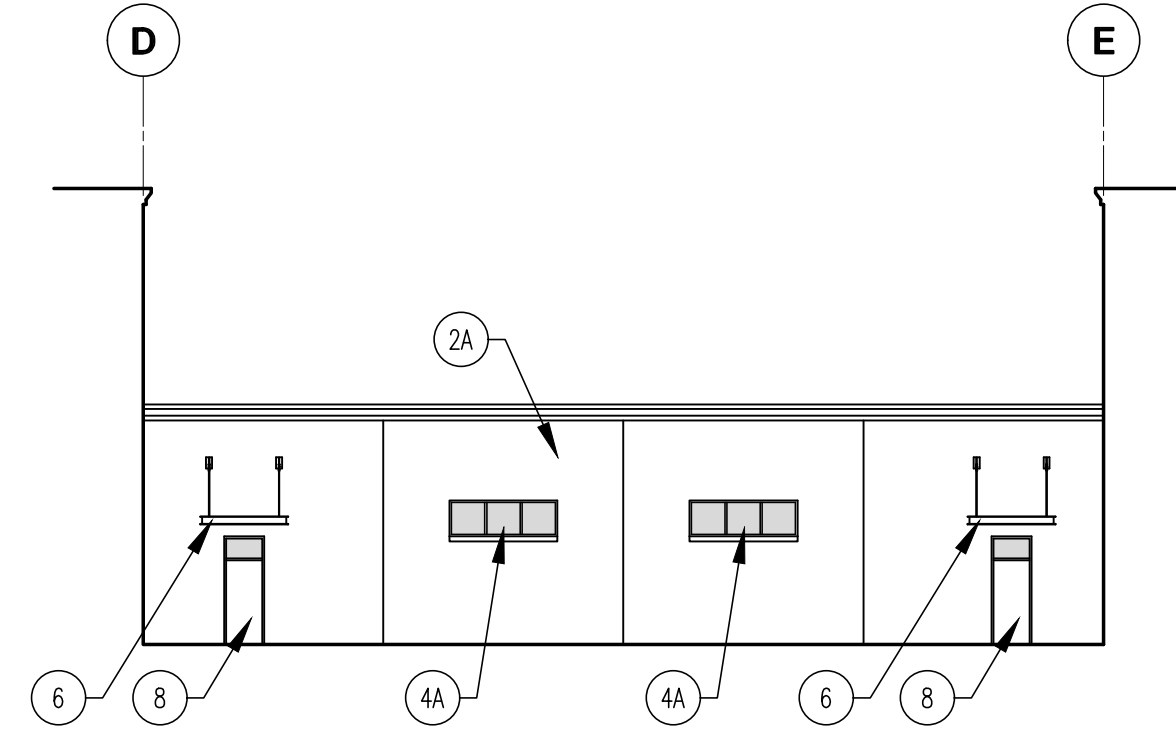
SCALE: 1/16" = 1'-0"

| EXTERIOR MATERIALS & FINISHES | | | |
|-------------------------------|------------------|--|----------------------------|
| MARK | ITEM: | DESCRIPTION | REMARKS: |
| 1 | COPING | PREFINISHED GALVANIZED METAL | SILVER COLOR |
| 2A | CONCRETE WALL | TILT CONCRETE PANEL - STAINED LIGHT | |
| 2B | CONCRETE WALL | TILT CONCRETE PANEL - STAINED DARK | |
| 3 | PRECAST SILL | PRECAST CONCRETE - STAIN LIGHT | |
| 4A | STOREFRONT | 2" X 4.5" ALUMINUM WITH THERMAL BREAK WITH SLOPED CONCRETE SILL | CLEAR ANODIZED |
| 4B | STOREFRONT | 2" X 4.5" ALUMINUM WITH THERMAL BREAK WITH PRECAST CONCRETE SILL | CLEAR ANODIZED |
| 5 | MAIN CANOPY | STEEL FRAME, PAINTED | |
| 6 | OTHER CANOPIES | STEEL FRAME, PAINTED | |
| 7 | SCONCE | TECH LIGHTING - TURBO LED WALL SCONCE | |
| 8 | MAN DOOR | INSULATED METAL DOOR, PAINTED | |
| 9 | OH DOCK DOOR | INSULATED OVERHEAD DOOR, PAINTED | |
| 10 | OH DRIVE-IN DOOR | INSULATED GLASS OVERHEAD DOOR | |
| 11 | BIKE RACKS | STAND-UP FLOOR MOUNT | BIKERACK.COM STANDUP-IG-XX |
| 12 | TRASH / RECYCLE | CONCRETE ENCLOSURE WITH METAL GATE | |
| 13 | GREEN WALL | STEEL FRAME WITH CABLE | |



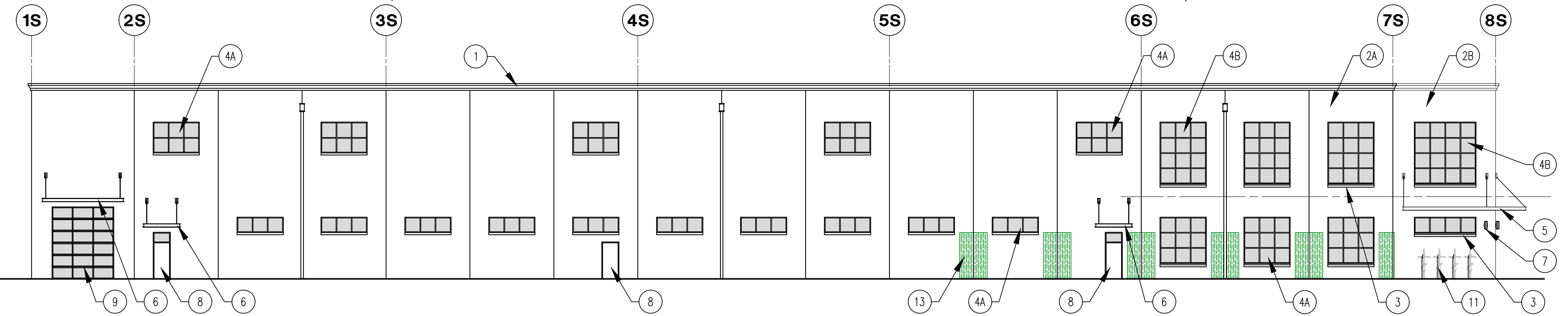
WEST ELEVATION - NORTH WING

SCALE: 1/16" = 1'-0"



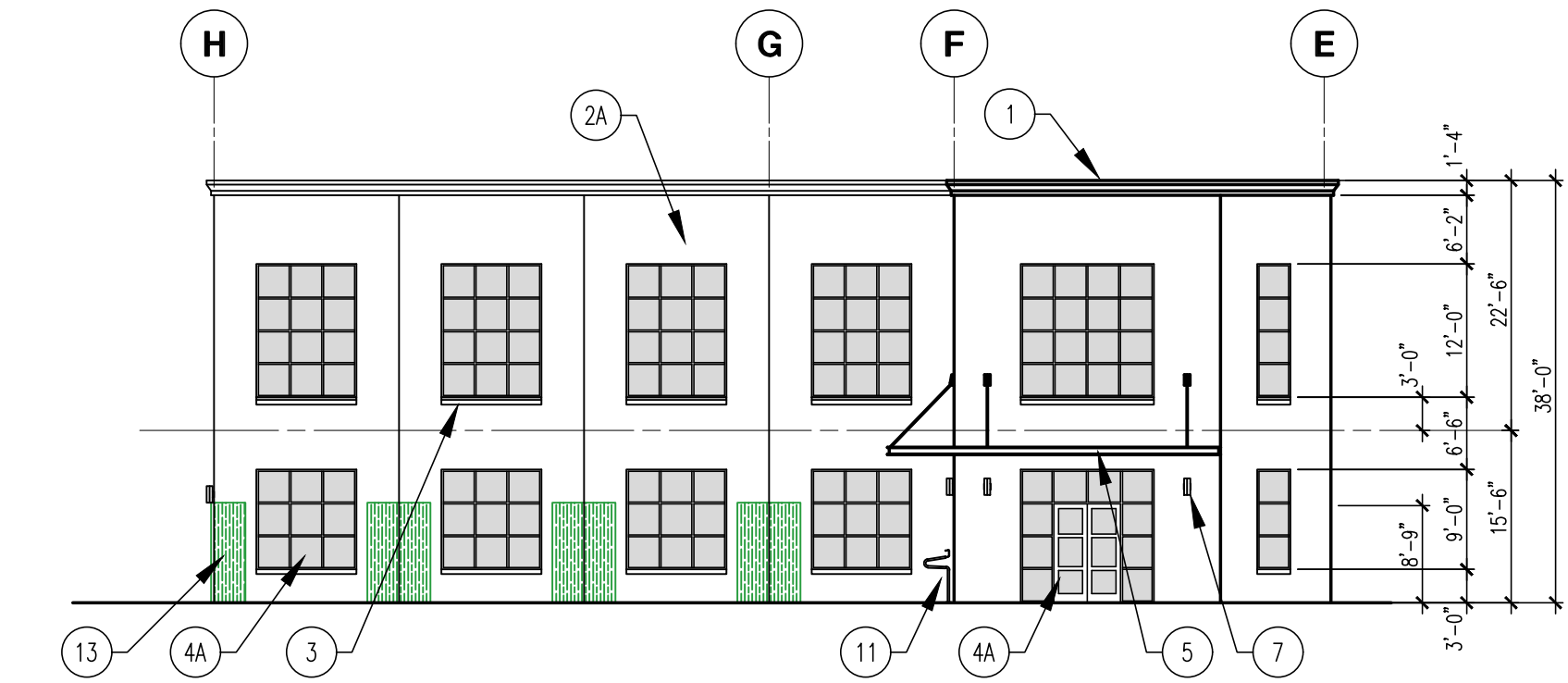
EAST ELEVATION - LOADING

SCALE: 1/16" = 1'-0"



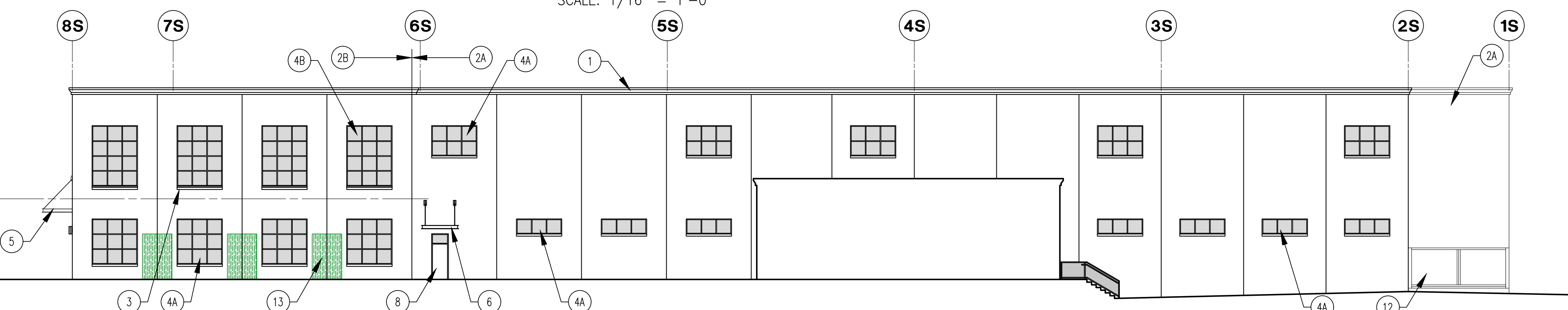
SOUTH ELEVATION - SOUTH WING

SCALE: 1/16" = 1'-0"



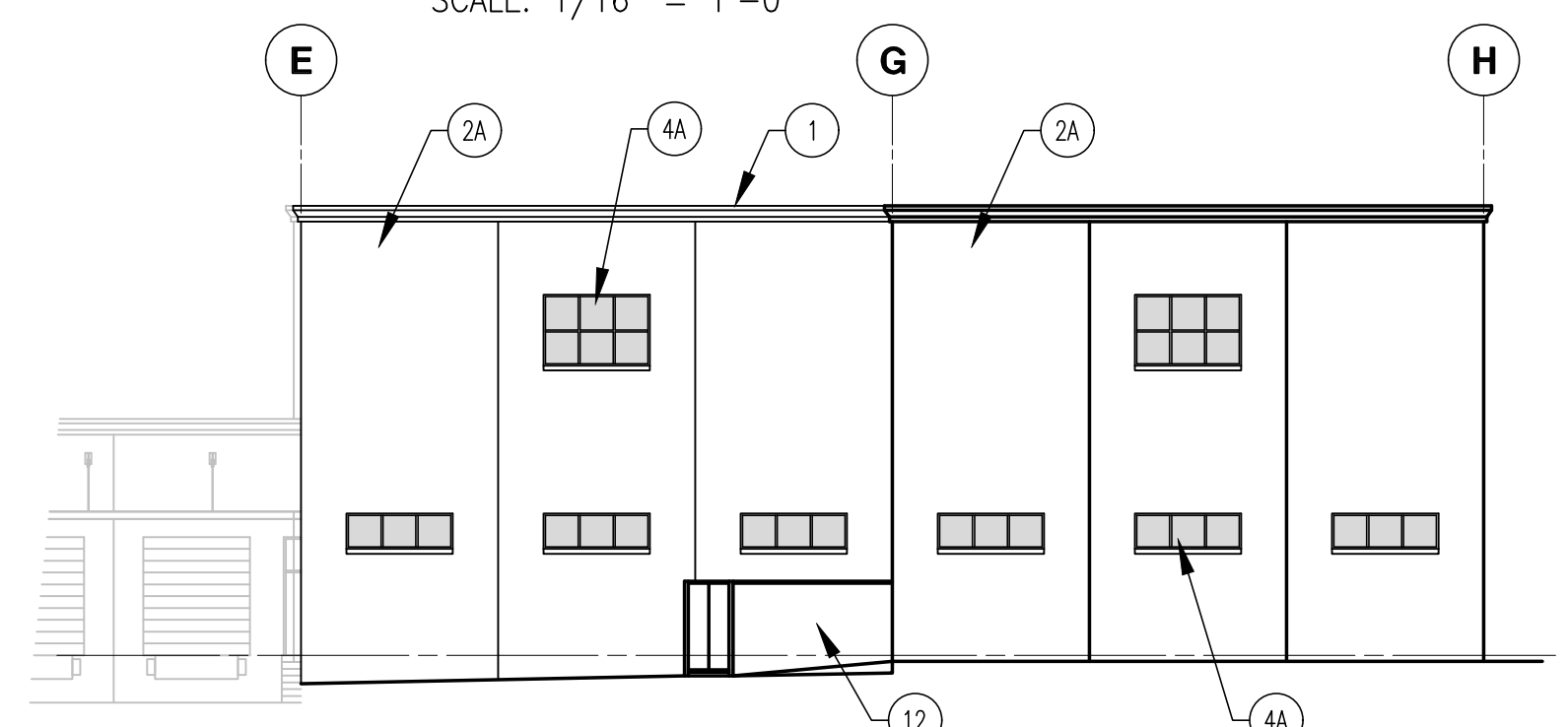
EAST ELEVATION - SOUTH WING

SCALE: 1/16" = 1'-0"



NORTH ELEVATION - SOUTH WING

SCALE: 1/16" = 1'-0"



WEST ELEVATION - SOUTH WING

SCALE: 1/16" = 1'-0"

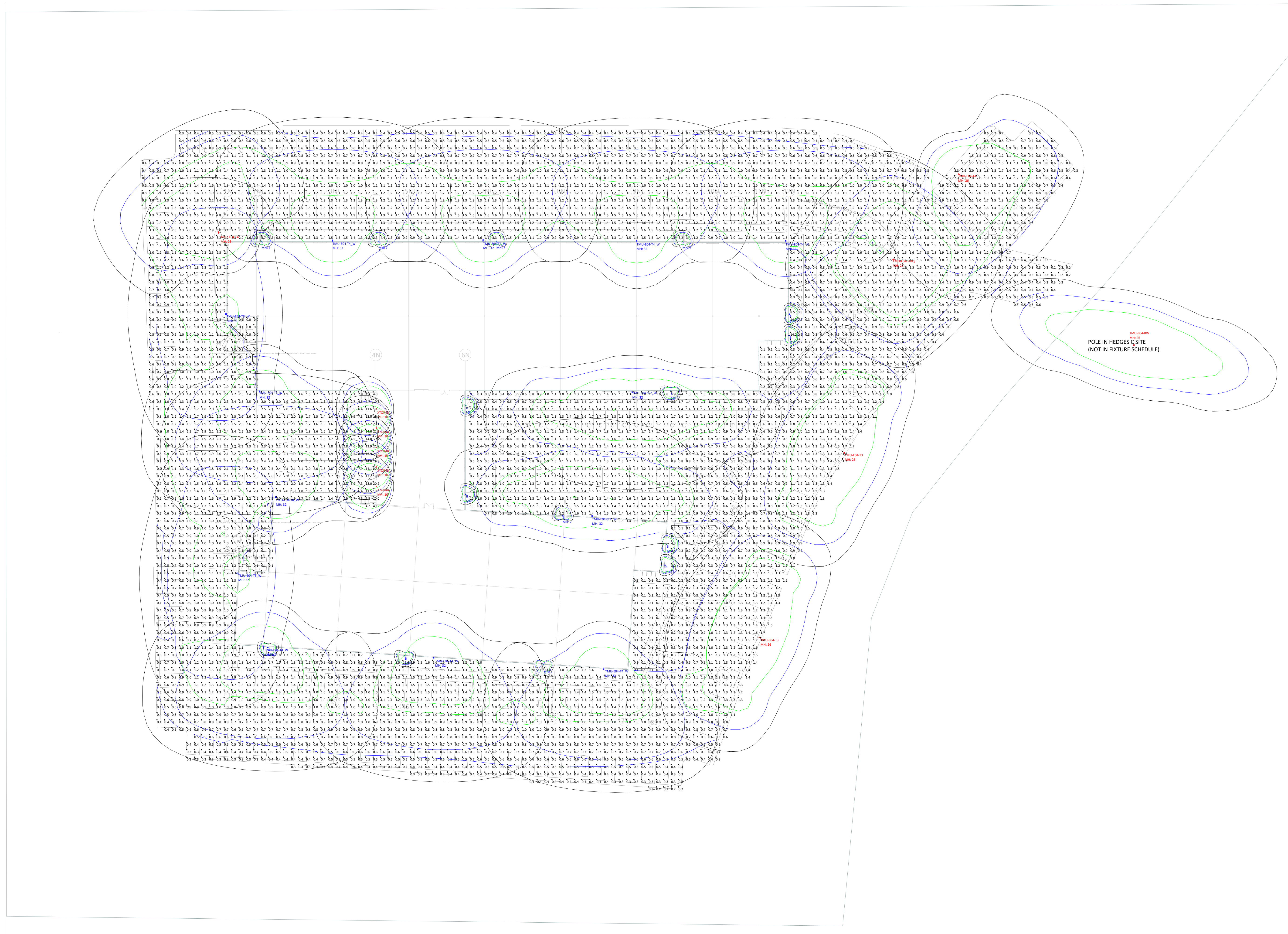
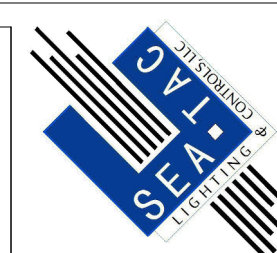
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 REGISTERED ARCHITECT
 SEATTLE, WA
 1981
 STATE OF OREGON
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 date
 12-16-19
 revision
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 date

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EXTERIOR ELEVATIONS
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 ARCHITECTS
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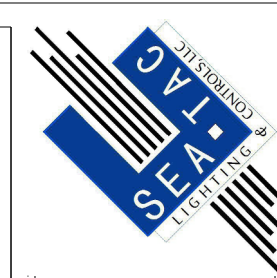
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Scale: 1 inch = 30 Ft.

| Standard Luminaire Schedule | | | | | | | | | | | |
|-----------------------------|-----|-------------|---|------------------------|-------|---------|-------------|------------------|------------|------------------------------------|------------|
| Project: Project 1 | | | | | | | | | | | |
| Symbol | Qty | Label | Manufacturer | Part # Description | LLF | Arm | Arrangement | Arr. Lum. Lumens | Arr. Watts | Filename | BUG Rating |
| 1 | 15 | B | GENERATION BRANDS | 700WTUR18SCC401201 | 0.900 | 0 | SINGLE | 571 | 15.3 | 102171228CH-029 GB 700WTUR18S12-G0 | |
| 1 | 1 | TMU-E04-SM2 | EATON - STREETWORKS (FORMER COOPER LIGHTING) | TMU-E04-LED-E-U-SM2 | 0.900 | 0.66725 | SINGLE | 12085 | 97.2 | TMU-E04-LED-E-U-SM2.ies | B2-U0-G2 |
| 2 | 2 | TMU-E04-SK2 | WEATON - STREETWORKS (FORMER COOPER LIGHTING) | TMU-E04-LED-E-U-SL2-WM | 0.900 | 0.66725 | SINGLE | 12231 | 97.2 | TMU-E04-LED-E-U-SL2.ies | B2-U0-G2 |
| 2 | 2 | TMU-E04-T3 | WEATON - STREETWORKS (FORMER COOPER LIGHTING) | TMU-E04-LED-E-U-T3-WM | 0.900 | 0.66725 | SINGLE | 12336 | 97.2 | TMU-E04-LED-E-U-T3.ies | B2-U0-G3 |
| 2 | 2 | TMU-E04-T3 | EATON - STREETWORKS (FORMER COOPER LIGHTING) | TMU-E04-LED-E-U-T3 | 0.900 | 0.66725 | SINGLE | 12336 | 97.2 | TMU-E04-LED-E-U-T3.ies | B3-U0-G3 |
| 9 | 9 | TMU-E04-T4 | WEATON - STREETWORKS (FORMER COOPER LIGHTING) | TMU-E04-LED-E-U-T4-WM | 0.900 | 0.66725 | SINGLE | 12088 | 97.2 | TMU-E04-LED-E-U-T4.ies | B2-U0-G2 |
| 2 | 2 | TMU-E04-T4 | EATON - STREETWORKS (FORMER COOPER LIGHTING) | TMU-E04-LED-E-U-T4 | 0.900 | 0.66725 | SINGLE | 12088 | 97.2 | TMU-E04-LED-E-U-T4.ies | B2-U0-G2 |
| 5 | 5 | XTOR4B | EATON - LUMARK (FORMER COOPER LIGHTING) | XTOR4B | 0.900 | 0 | SINGLE | 4269 | 37.7 | XTOR4B.ies | B2-U0-G0 |

NOTES:
 1. LIGHT LOSS FACTOR APPLIED, INITIAL VALUES WILL BE HIGHER
 2. FIXTURE HEIGHT: NOTED
 3. POLE HEIGHT: FIXTURE HEIGHT LESS BASE
 4. STANDARD REFLECTANCE USED: 20% GROUND EQUAL TO ASPHALT
 5. CALCULATION POINTS LOCATED ON GROUND

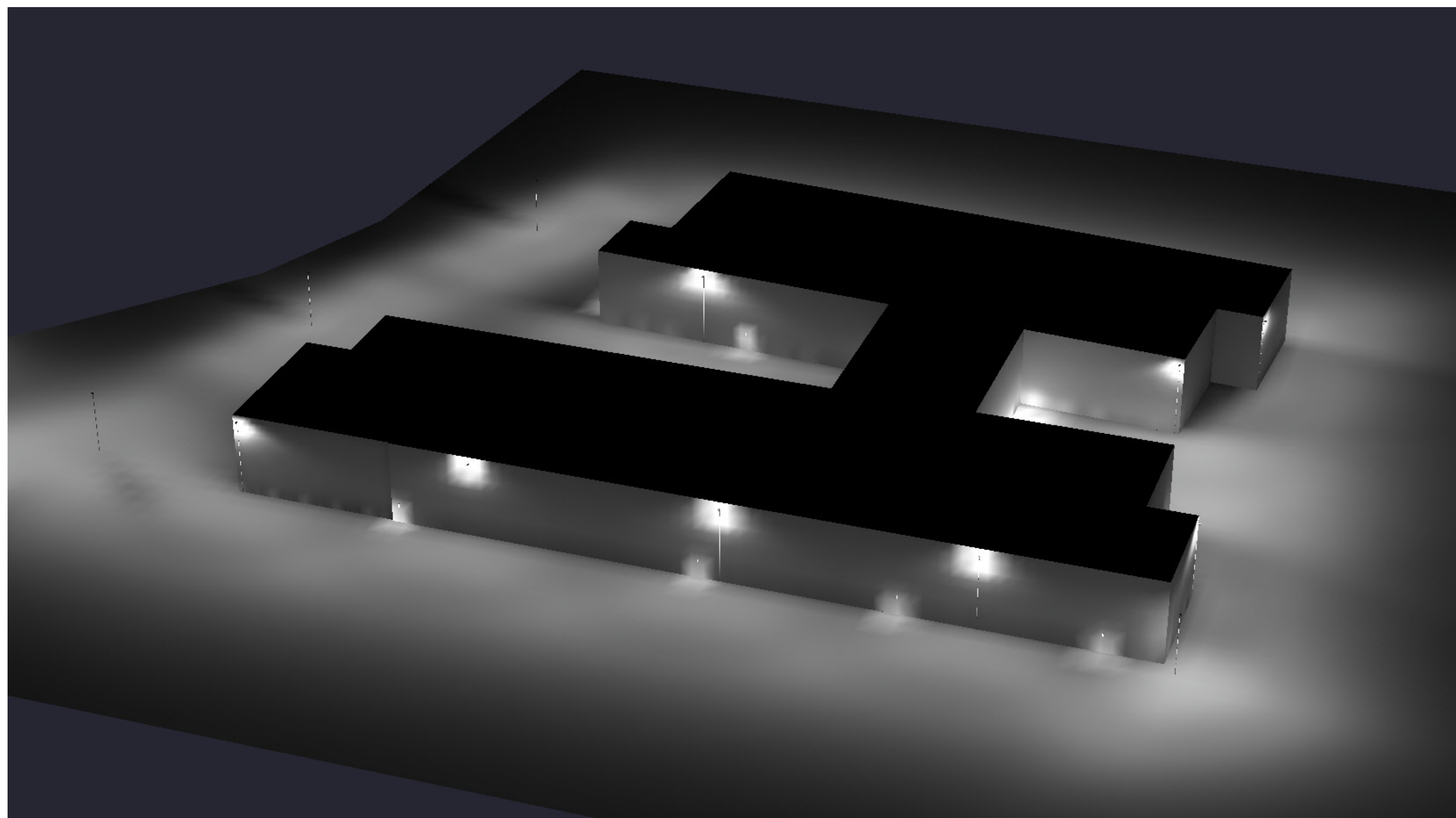
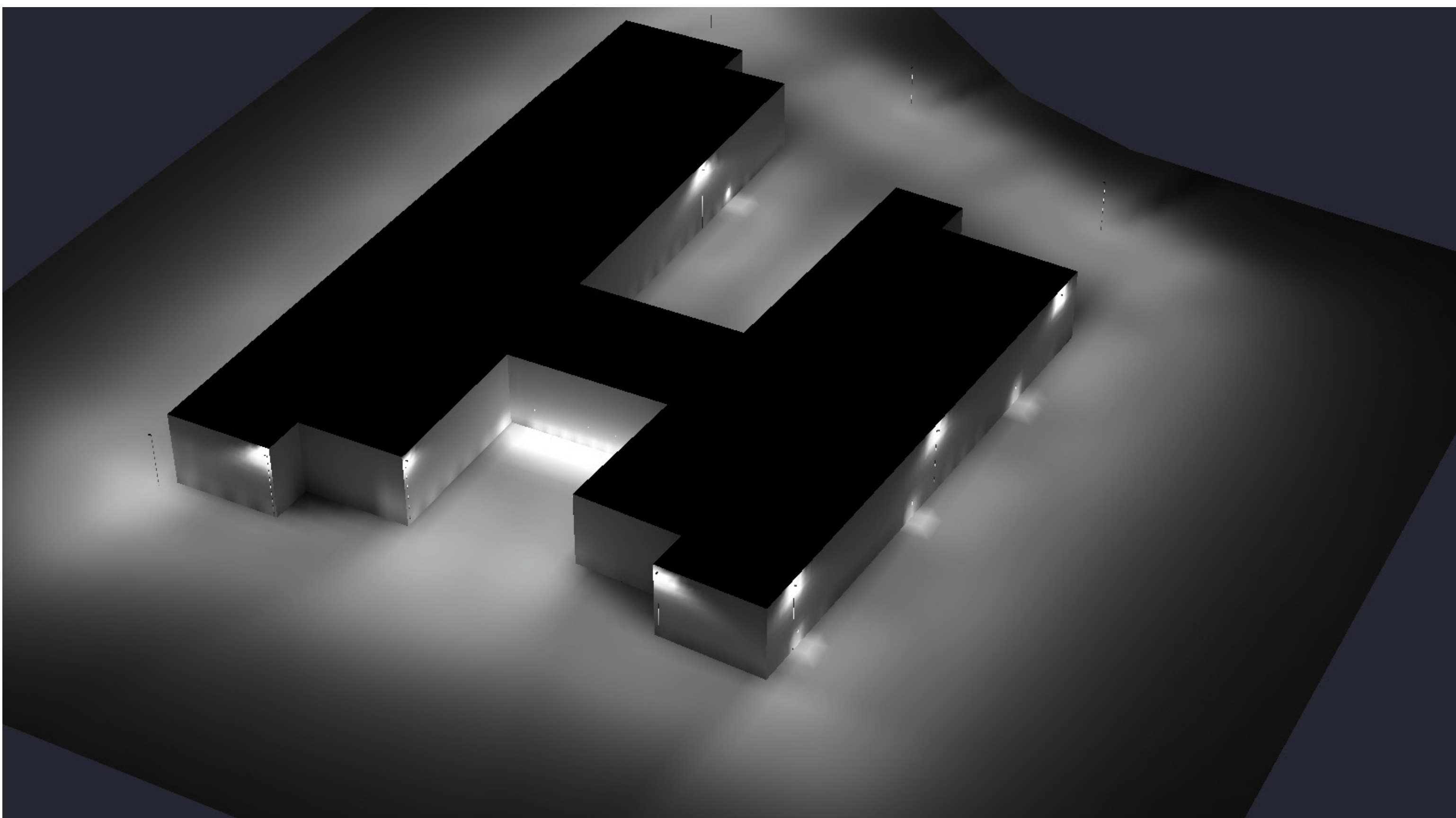
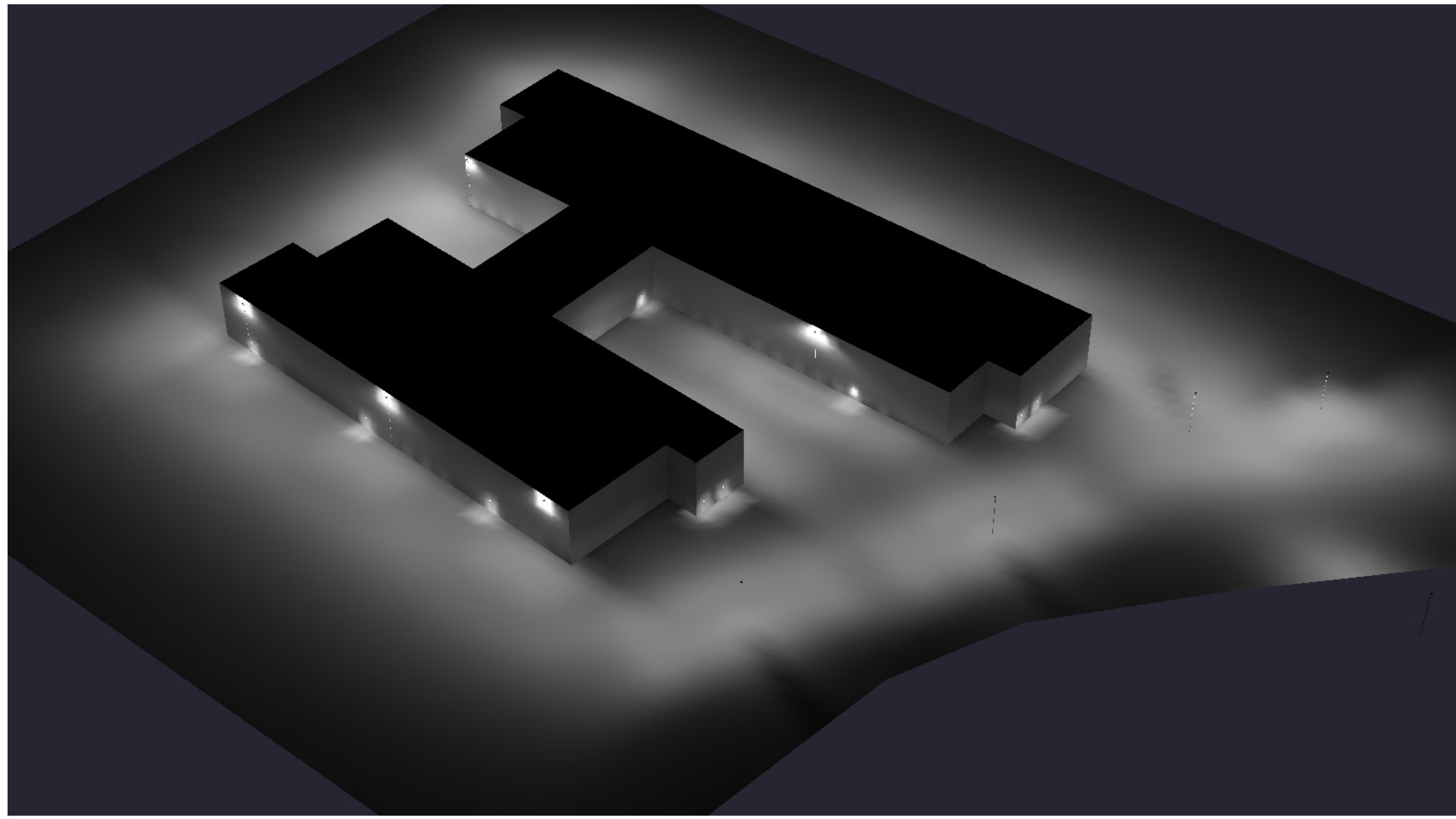
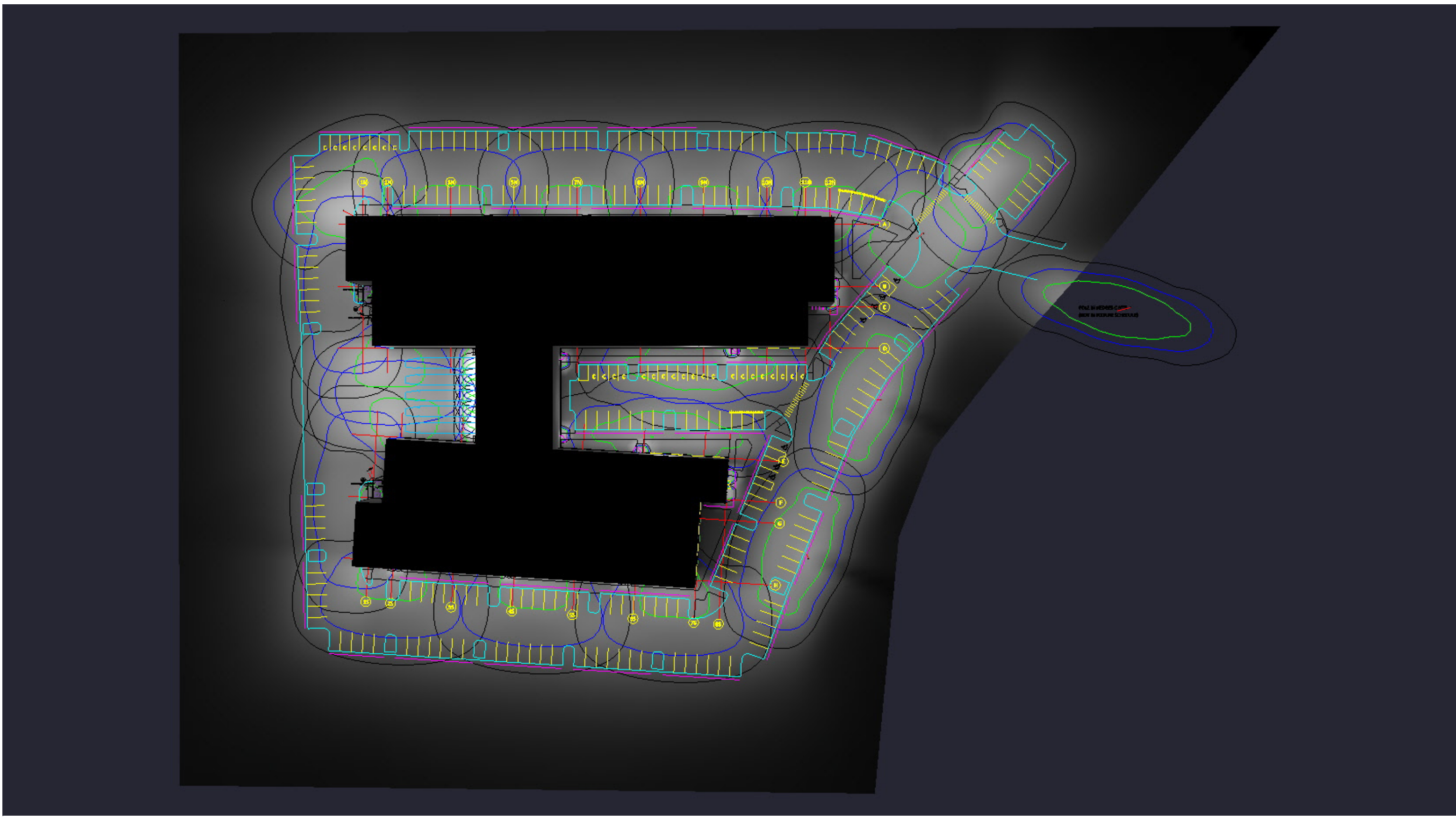


SEATAC LIGHTING & CONTROLS, LLC
 15455 - 53rd Ave. S.
 Tukwila, WA 98188
 FOR ALL DRAWING INQUIRIES PLEASE CONTACT
 SEATAC LIGHTING 206-575-6665

TITLE
 LIGHTING CALCULATION

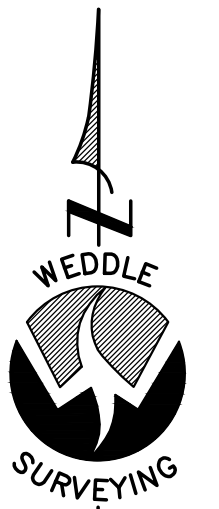
PROJECT NAME
 HEDGES D
 LOCATION
 TULATIN, OREGON

DATE
 12/13/2019
 DRAWN BY
 JWILLIAMS
 SCALE
 NOTED
 SHEET NO.
 Page 2 of 2



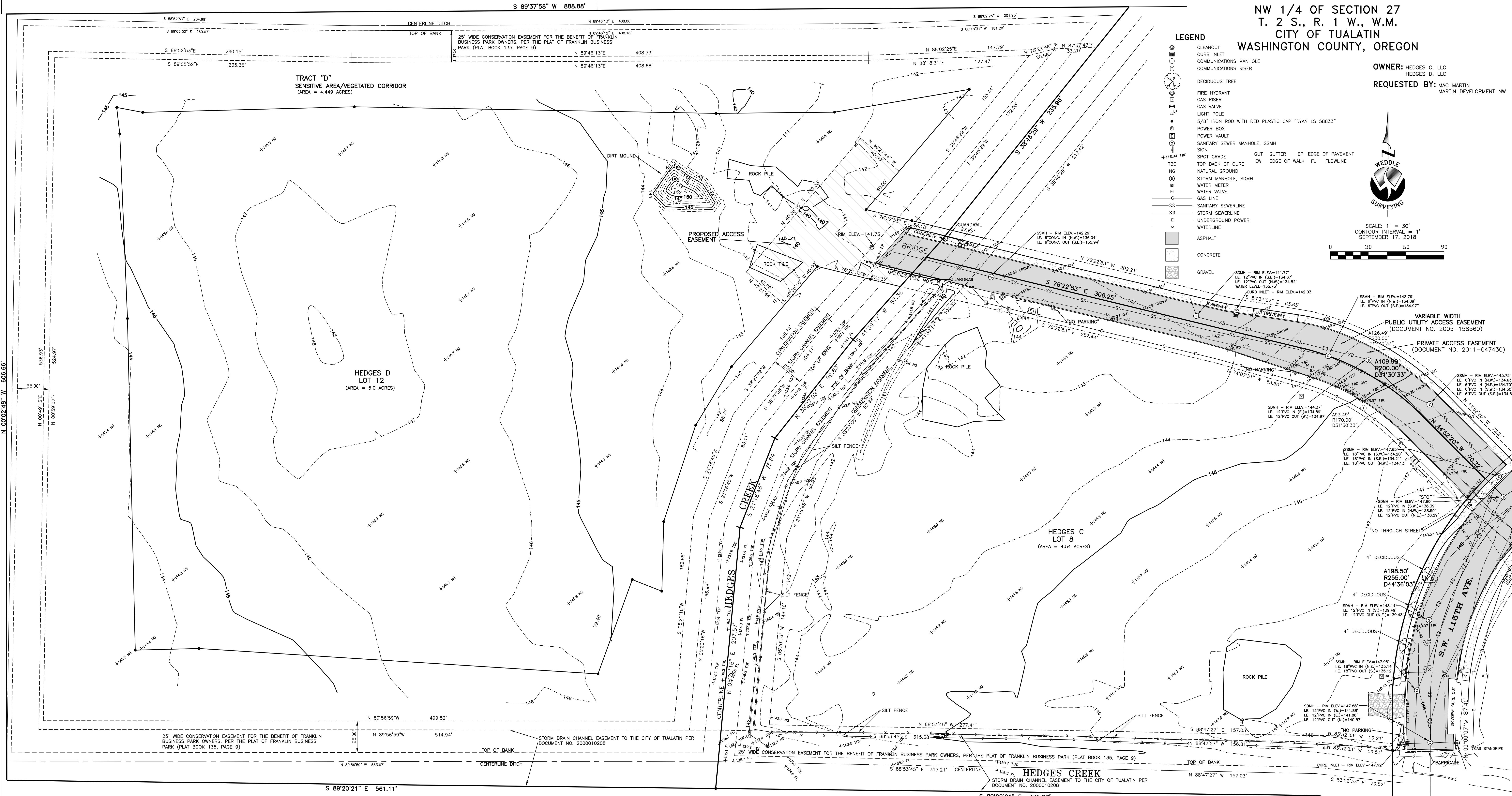
TOPOGRAPHIC SURVEY
HEDGES C AND D
 LOT 8, "FRANKLIN BUSINESS PARK" NO. 4 &
 LOT 12, "FRANKLIN BUSINESS PARK" NO. 6
 NW 1/4 OF SECTION 27
 T. 2 S., R. 1 W., W.M.
 CITY OF TUALATIN
 WASHINGTON COUNTY, OREGON

OWNER: HEDGES C, LLC
 HEDGES D, LLC
 REQUESTED BY: MAC MARTIN
 MARTIN DEVELOPMENT NW



SCALE: 1" = 30'
 CONTOUR INTERVAL = 1'
 SEPTEMBER 17, 2018

- LEGEND**
- CLEANOUT
 - CURB INLET
 - COMMUNICATIONS MANHOLE
 - COMMUNICATIONS RISER
 - DECIDUOUS TREE
 - FIRE HYDRANT
 - GAS RISER
 - GAS VALVE
 - LIGHT POLE
 - 5/8" IRON ROD WITH RED PLASTIC CAP "RYAN LIS 58833"
 - POWER BOX
 - POWER VAULT
 - SANITARY SEWER MANHOLE, SSMH
 - SIGN
 - SPOT GRADE
 - GUT GUTTER EP EDGE OF PAVEMENT
 - TBC TOP BACK OF CURB
 - NG NATURAL GROUND
 - SD STORM MANHOLE, SDMH
 - W WATER METER
 - W VALVE
 - G GAS LINE
 - SS SANITARY SEWERLINE
 - SD STORM SEWERLINE
 - U UNDERGROUND POWER
 - W WATERLINE
 - ASPHALT
 - CONCRETE
 - GRAVEL



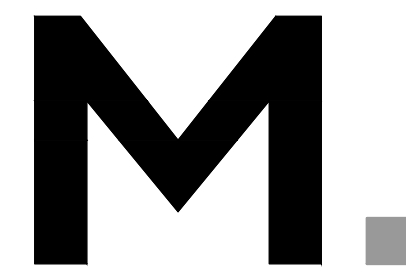
BASIS OF ELEVATIONS
 WEDDLE CONTROL POINTS WITH ELEVATIONS DERIVED FROM WASHINGTON COUNTY BENCHMARK NO. 89, A BRASS CAP IN MONUMENT BOX MARKING THE QUARTER CORNER BETWEEN SECTIONS 26 & 35, T.2S., R.1E., AT THE INTERSECTION OF IBACH ROAD AND BOONES FERRY ROAD.
 ELEVATION = 276.48' (NGVD '29) (MONUMENT HAS BEEN DESTROYED. RELATIVE ELEVATIONS HAVE BEEN PERPETUATED.)

- SURVEYOR'S NOTES**
- UTILITIES SHOWN HEREON ARE PER ABOVE GROUND EVIDENCE AS BUILT MAPPING FROM THE CITY OF TUALATIN AND NORTHWEST NATURAL GAS AND UTILITY LOCATE SERVICE POINT. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, OR EXTENT OF UNDERGROUND UTILITIES. CALL 811 BEFORE DIGGING.
 - MULTIPLE UNMARKED UTILITIES CROSSING NEXT TO BRIDGE.
 - THE BASIS OF BEARINGS FOR THIS SURVEY IS THE PLAT OF "FRANKLIN BUSINESS PARK", WASHINGTON COUNTY PLAT RECORDS.
 - EASEMENTS ARE SHOWN PER THE PLAT OF FRANKLIN BUSINESS PARK NO. 4 AND 6.
 - NOT ALL SURVEY MONUMENTS ARE NOT SHOWN. REFER TO THE PLAT OF FRANKLIN BUSINESS PARK NO. 4 AND 6 FOR MONUMENT LOCATIONS.

- REVISIONS/UPDATES**
- 09/17/18 EXPANDED TOPOGRAPHY TO SOUTH AND WEST (TOWARD CREEK) OVER HEDGES 'C' SITE, DUE TO RECENT CLEARING, GRADING AND BRUSH REMOVAL.
 - 09/24/18 ADDED SPOT ELEVATIONS OF CREEK TO SOUTH AND WEST OF HEDGES 'C' SITE, DUE TO RECENT BRUSH REMOVAL.

REGISTERED PROFESSIONAL LAND SURVEYOR
 OREGON (JULY 13, 2004)
 ANTHONY B. RYAN
 58833
 RENEWAL: DECEMBER 31, 2018





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Client

**MARTIN
DEVELOPMENT NW**

**PO BOX 15523
SEATTLE, WA
98115**

Project
HEDGES D

GENERAL NOTES

- ALL WORK SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION
- THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN IS BASED ON A SURVEY BY OTHERS AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH ITS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION
- CONTRACTOR MUST COMPLY WITH LOCAL AND STATE REQUIREMENTS TO NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
- CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES
- REQUEST BY THE CONTRACTOR FOR CHANGES TO THE PLANS MUST BE APPROVED BY THE ENGINEER.
- ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A PUBLIC WORKS PERMIT
- CONTRACTOR SHALL PROVIDE THE ENGINEER OF RECORD WITH AS-BUILT PLANS AT LEAST 2 WEEKS PRIOR TO REQUESTING AGENCY SIGN OFF ON PERMITS FOR OCCUPANCY
- CONTRACTOR SHALL PERFORM ALL THE WORK SHOWN ON THE DRAWINGS AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THE PROJECT

DEMOLITION NOTES

- INSTALL EROSION CONTROL MEASURES AND TEMPORARY FENCING PRIOR TO ANY DEMOLITION ACTIVITIES
- DEMOLISH AND REMOVE ALL STRUCTURES AND ASSOCIATED FEATURES (APPURTENANCES), AS SHOWN
- DEMOLISH ALL PAVED AREAS ON SITE AS SHOWN, DOWN TO NATIVE SUBGRADE
- ALL VEGETATION AND DELETERIOUS MATERIALS WITHIN THE LIMITS OF WORK SHALL BE STRIPPED AND REMOVED FROM THE SITE PRIOR TO GRADING WORK, UNLESS NOTED OTHERWISE (E.G. PROTECTED TREES)
- PROTECT ALL EXISTING LANDSCAPING AT AND BEYOND LIMITS OF WORK
- PROTECT ALL UNDERGROUND UTILITY SERVICES AND CONDUIT UNLESS NOTED OTHERWISE
- WHERE APPLICABLE, VERIFY DISCONNECT OF GAS AND ELECTRIC WITH UTILITY. CUT/CAP UTILITY SERVICES (STORMWATER AND SANITARY WITHIN 5 FEET OF EDGE OF R.O.W.) CAP WATERLINE ON OWNER'S SIDE OF METER AND PERFORM OTHER DEMOLITION TASKS AS REQUIRED. ADDITIONAL REMOVALS MAY BE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CONTRACTOR SHALL CONFIRM ACCORDINGLY PRIOR TO BID

GRADING NOTES

- ROUGH GRADING:** ROUGH GRADE TO ALLOW FOR DEPTH OF BUILDING SLABS, PAVEMENTS, BASE COURSES, AND TOPSOIL PER DETAILS AND SPECIFICATIONS
- FINISH GRADING:** BRING ALL FINISH GRADES TO LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, HARDSCAPE FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. SOFTSCAPE GRADES (INCLUDING ADDITIONAL DEPTH OF TOPSOIL) SHALL BE SET 6 INCHES BELOW BUILDING FINISHED FLOORS WHERE ABUTTING BUILDINGS, 1-2 INCHES WHERE ABUTTING WALKWAYS OR CURBS, OR MATCHING OTHER SOFTSCAPE GRADES. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER TRADES HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES

- EXCAVATION:** EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
- EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE LOCAL AGENCY AND STATE AGENCY REQUIREMENTS. THE AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL
- DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE ENGINEER AND/OR AUTHORITIES HAVING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL
- SITE TOPSOIL, STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT
- CONTRACTOR TO REVIEW AND CONFIRM GRADES AT JOIN POINTS, SUCH AS AT DAYLIGHT LIMITS AND BUILDING ENTRANCES, PRIOR TO CONSTRUCTION
- ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL BE CONSTRUCTED AT 2% MAXIMUM SLOPE IN ALL DIRECTIONS
- PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES SHALL BE CONSTRUCTED AT AND 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM LONGITUDINAL SLOPE (8.33% FOR DESIGNATED RAMPS)

SITE WORK NOTES

- ALL CURB RADII TO BE 3 FEET UNLESS NOTED OTHERWISE
- STAIR RISERS AND TREADS SHALL BE CONFORMANT WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE BUILDING CODE (E.G. INTERNATIONAL BUILDING CODE, CHAPTER 10, SECTION 1011.5)
- WHEREVER A PEDESTRIAN WALKING PATH IS WITHIN 36 INCHES OF A VERTICAL DROP OF 30 INCHES OR GREATER, GUARDRAIL SHALL BE INSTALLED CONFORMANT WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE BUILDING CODE (E.G. INTERNATIONAL BUILDING CODE, CHAPTER 10, SECTION 1015)

UTILITY NOTES

- ALL WORK SHALL CONFORM TO THE CURRENT EDITIONS OF THE STATE PLUMBING AND BUILDING CODES WITH LOCAL AMENDMENTS AS APPLICABLE ALONG WITH ANY ADDITIONAL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
- THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING (POT-HOLING), PROVIDING SUCH IS PERMITTED BY THE AUTHORITIES HAVING JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
- NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS. PROVIDE CLEANOUTS AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND THE CURRENT EDITION OF THE STATE PLUMBING CODE (E.G. UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1101.13)

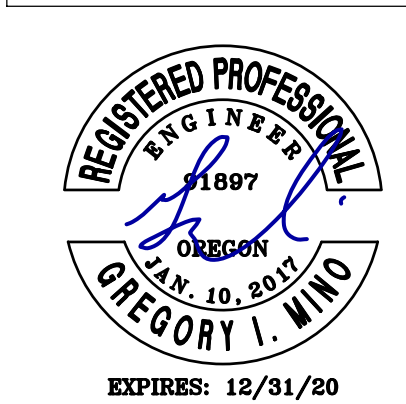
- ALL SANITARY AND STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED
- ALL DOWNSPOUT LEADERS TO BE 6 INCHES AT 2.0% MINIMUM UNLESS NOTED OTHERWISE
- IF APPLICABLE, PROVIDE 2 INCH PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2 INCH PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH 3/4 INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS
- IF APPLICABLE, CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE LANDSCAPE PLANS AND SPECIFICATIONS
- SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5 FEET OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING
- CONTRACTOR TO MAINTAIN MINIMUM 3 FEET OF COVER OVER ALL UTILITY PIPING AND CONDUITS, UNLESS NOTED OTHERWISE
- WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE END OF THE EXISTING PIPE TO VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES
- CONTRACTOR SHALL SCOPE ALL PRIVATE ONSITE GRAVITY SYSTEM LINES THAT ARE BEING CONNECTED TO FOR PROPOSED SERVICE. SCOPING SHALL OCCUR A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES WITH AS-BUILT RECORDS/SURVEY FINDINGS OR IF THE EXISTING UTILITIES ARE DAMAGED OR SHOW SIGNS OF SIGNIFICANT DETERIORATION. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH VIDEO RECORDS, ALONG WITH A SKETCH IF THE LOCATIONS DIFFER FROM AS-BUILT PLANS OR SURVEY FINDINGS
- PRODUCT MATERIAL SUBMITTALS FOR REVIEW BY THE ENGINEER SHALL BE ACCOMPANIED BY A MANUFACTURER'S CERTIFICATION THAT THE PRODUCT IS CAPABLE OF MEETING PERFORMANCE EXPECTATIONS (I.E. - WATERTIGHT, MINIMUM MAXIMUM BURIAL, PREVENTION OF GROUNDWATER INTRUSION, ETC.) BASED ON THEIR REVIEW OF THE PRODUCT PLANS. IN THE ABSENCE OF A MANUFACTURER'S CERTIFICATION, THE GENERAL CONTRACTOR'S REVIEW STAMP SHALL CONSTITUTE THAT THEY HAVE PERFORMED THE NECESSARY REVIEW TO CERTIFY THE PRODUCT'S CONFORMANCE TO PROJECT SPECIFICATIONS AND GENERAL EXPECTATIONS
- PIPE LENGTHS SHOWN ON PLANS ARE TWO DIMENSIONAL AND MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE
- RIM ELEVATIONS SHOWN ON PLANS REFERENCE THE CENTER OF THE STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONCILING LIDS/GRATES/ETC TO THE SLOPES OF THE SITE GRADING
- MANHOLE OR VAULT RIM ELEVATIONS SHALL BE SET FLUSH IN PAVEMENT AREAS AND 3-4 INCHES ABOVE GRADE IN LANDSCAPE AREAS. RIMS IN PAVEMENT AREAS SHALL BE H-20 TRAFFIC RATED

ABBREVIATIONS

| | | | |
|------|--------------------------|-----|--------------------------|
| ARCH | ARCHITECTURAL | LS | LANDSCAPE |
| BW | BOTTOM OF WALL | MAX | MAXIMUM |
| CB | CATCH BASIN | MH | MANHOLE |
| C | COMPACT | MIN | MINIMUM |
| CL | CENTERLINE | NTS | NOT TO SCALE |
| CO | CLEANOUT | OC | ON CENTER |
| CRB | CRUSHED ROCK BASE | PCC | PORTLAND CEMENT CONCRETE |
| ELEV | ELEVATION | PIV | POST INDICATOR VALVE |
| EX | EXISTING | PSI | POUNDS PER SQUARE INCH |
| E.W. | EACH WAY | RD | ROOF DRAIN |
| FG | FINISHED GRADE | ROW | RIGHT OF WAY |
| FF | FINISHED FLOOR ELEVATION | SAN | SANITARY SEWER |
| FH | FIRE HYDRANT | STM | STORM |
| FW | FIRE WATER | TC | TOP OF CURB |
| GPM | GALLONS PER MINUTE | TW | TOP OF WALL |
| IE | INVERT ELEVATION | TYP | TYPICAL |
| INV | INVERT | WM | WATER METER |

LEGEND

| | EXISTING | PROPOSED |
|------------------------------|-----------|-----------|
| LOT/ROW LINE | --- | --- |
| LIMITS OF GRADING DESIGN | --- | --- |
| CENTERLINE | --- | --- |
| FIRE HYDRANT | ⊕ | ▲ |
| CATCH BASIN | ⊞ | ⊞ |
| MANHOLE | ⊕ ⊙ | ⊕ ⊙ |
| STREET/SITE LIGHT | ⊕ | ⊕ |
| SIGN | --- | --- |
| CARPOOL/VANPOOL SPACE | --- | C CARPOOL |
| CONTOUR | ---158--- | ---166--- |
| VEHICLE OVERHANG | --- | --- |
| SANITARY SEWER LINE | --- | --- |
| CENTERLINE OF STORM PIPE | --- | --- |
| PERFORATED STORM PIPE | --- | --- |
| FIRE WATERLINE | --- | --- |
| DOMESTIC WATERLINE | --- | --- |
| GAS LINE | --- | --- |
| WATER VALVE | ⊕ | ⊕ |
| POST INDICATOR VALVE | ⊕ | ⊕ |
| FIRE DEPARTMENT CONNECTION | ⊕ | ⊕ |
| POST INDICATOR VALVE | ⊕ | ⊕ |
| RIP RAP | ⊕ | ⊕ |
| STORM DRAIN CHANNEL EASEMENT | --- | --- |
| CONSERVATION EASEMENT | --- | --- |
| FLOW CONTROL MANHOLE | ⊕ | ⊕ |
| BACKFLOW ASSEMBLY | ⊕ | ⊕ |
| RIDGE LINE | --- | --- |
| WATER QUALITY FILTER | ⊕ | ⊕ |
| WETLAND BOUNDARY | --- | WTB |



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SHEET TITLE:
**CONSTRUCTION
NOTES,
ABBREVIATIONS,
AND LEGEND**

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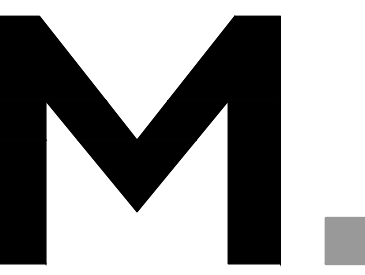
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GRADING SPECIFICATION NOTES:

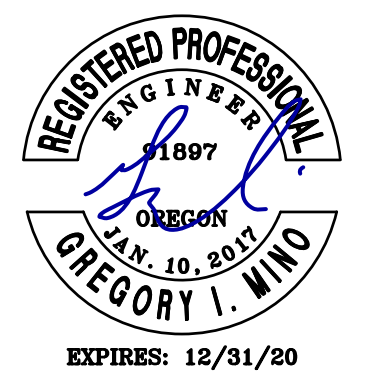
- THE PROJECT SPECIFIC GEOTECHNICAL REPORT OR RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER OF RECORD SHALL SUPERCEDE THESE REQUIREMENTS, WHERE CONFLICTS ARISE.
- MATERIALS:
 - IMPORTED STRUCTURAL FILL: WELL-GRADED PIT- OR QUARRY-RUN ROCK, CRUSHED ROCK, CRUSHED GRAVEL, OR SAND FREE OF CLAY BALLS, ROOTS, ORGANIC MATTER, AND OTHER DELETERIOUS MATERIALS. FILL SHALL HAVE A MAXIM PARTICLE SIZE OF 8 INCHES AND IN WET WEATHER HAVE LESS THAN 12 PERCENT BY DRY WEIGHT PASSING THE U.S. STANDARD NO. 200 SIEVE (ASTM C 117) OR 5 PERCENT IN DRY WEATHER.
 - SELECT STRUCTURAL FILL: ON-SITE OR IMPORTED SILTY MATERIALS THAT ARE FREE OF DELETERIOUS MATERIALS AND PARTICLES GREATER THAN 4 INCHES IN DIAMETER. ALL SELECT STRUCTURAL FILLS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO USE AS STRUCTURAL FILL MATERIAL.
 - IMPORTED GRANULAR MATERIAL: 3/4 INCH MINUS TO 1-1/2 INCH CRUSHED ROCK OR CRUSHED GRAVEL AND SAND WITH LESS THAN 5 PERCENT BY DRY WEIGHT PASSING THE U.S. STANDARD NO. 200 SIEVE (ASTM C 117).
 - STABILIZATION MATERIAL: IMPORTED GRANULAR MATERIAL, 6 INCH MINUS, PIT- OR QUARRY-RUN ROCK, CRUSHED ROCK FREE OF CLAY BALLS, ROOTS, ORGANIC MATTER, AND OTHER DELETERIOUS MATERIALS WITH LESS THAN 5 PERCENT BY DRY WEIGHT PASSING THE U.S. STANDARD NO. 200 SIEVE (ASTM C 117).
 - 1-1/2 INCH (100); 1 INCH (95-100); 1/2 INCH (25-60); NO. 4 (0-10); NO. 8 (0-5)
 - ON-SITE TOPSOIL: IF NOT DEFINED BY THE LANDSCAPE ARCHITECT, ON-SITE TOPSOIL SHALL BE FREE OF PARTICLES GREATER THAN 1 INCH DIAMETER, ADMIXTURES OF SUBSOIL, CLAY, NOXIOUS WEEDS AND GRASSES (I.E. HORSETAIL, QUACKGRASS, JOHNSON GRASS) AND OTHER MATERIAL DELETERIOUS TO PLANT GROWTH OR THAT HINDER GRADING, PLANTING, OR MAINTENANCE OPERATIONS.
 - IMPORTED TOPSOIL: IF NOT DEFINED BY THE LANDSCAPE ARCHITECT, IMPORTED TOPOSOIL SHALL CONSIST OF SANDY/LOAM FROM APPROVED SOURCES AND SHALL BE FREE OF PARTICLES GREATER THAN 1-INCH DIAMETER AND ADMIXTURES OF SUBSOIL, CLAY, NOXIOUS WEEDS AND GRASSES (I.E. HORSETAIL, QUACKGRASS, JOHNSON GRASS) AND OTHER MATERIAL DELETERIOUS TO PLANT GROWTH OR THAT HINDER GRADING, PLANTING, OR MAINTENANCE OPERATIONS.
- MINIMUM COMPACTION DENSITY UNLESS OTHERWISE NOTED (MAXIMUM DRY DENSITY DETERMINED BY ASTM D1557):
 - UNDER PAVING, SLAB ON GRADE, OR OTHER STRUCTURES OR PAVEMENTS: MINIMUM OF 95% OF MAXIMUM DRY DENSITY.
 - UNDER LANDSCAPING: MINIMUM OF 90% OF MAXIMUM DRY DENSITY.
- ALL FILL AND BACKFILL SHALL BE BE PROPERLY MOISTURE CONDITIONED TO MEET THE COMPACTION REQUIREMENTS. IMPORTED GRANULAR MATERIALS SHALL BE COMPACTED IN UNIFORM LAYERS NOT EXCEEDING 12 INCHES, 8 INCHES FOR SELECT STRUCTURAL FILL.
- GRADING TOLERANCES:
 - ROUGH GRADE AT PAVED OR LANDSCAPED AREAS: ±0.1 FEET
 - FINISH GRADE PRIOR TO PLACING FINAL SURFACING: ±0.04 FEET
 - FINISH GRADE OF FINAL SURFACING: ±0.02 FEET

SITE WORK SPECIFICATION NOTES:

- BASE ROCK FOR CONCRETE SLABS, PAVEMENT, AND SIDEWALKS: 3/4 INCH CRUSHED AGGREGATE BASE IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION (DOT) SPECIFICATIONS, LATEST EDITION.
- PLACE AGGREGATE IN MAXIMUM 4 INCH LAYERS. ROLLER COMPACT TO SPECIFIED DENSITY. USE MECHANICAL TAMPING EQUIPMENT IN AREAS INACCESSIBLE TO ROLLER EQUIPMENT. COMPACT AGGREGATE BASE TO MINIMUM 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.
- WHERE NOT NOTED ON PLANS, INSURE 0.5% MINIMUM SLOPE ON CONCRETE SURFACES, 1.0% ON ASPHALT SURFACES, AND 2.0% IN LANDSCAPED AREAS.
- HOT MIX ASPHALT CONCRETE (HMCA): LEVEL 2, 1/2 INCH DENSE-GRADED HMCA (OR EQUAL) PER STATE DOT SPECIFICATIONS, PG 64-22 OR BETTER.
 - PLACE HMCA OVER PREPARED AND COMPACTED AGGREGATE BASE PER PLAN. MINIMUM LIFT THICKNESS: 2.0 INCHES. MAXIMUM LIFT THICKNESS: 3.0 INCHES.
 - COMPACT HMCA TO MINIMUM DENSITY 91% OF ASTM D2041 LABORATORY DENSITY.
 - SEAL COAT (FOG COAT): EMULSIFIED ASPHALT FOG COAT, CSS-1, CSS-1H, OR HRFCS-P1 TYPE PER STATE DOT SPECIFICATIONS.
 - PREPARE EMULSIFIED ASPHALT PER MANUFACTURER'S REQUIREMENTS. APPLY UNIFORMLY WITH AN ASPHALT DISTRIBUTOR AT A RATE OF 0.10 TO 0.15 GALLONS PER SQUARE YARD, OR AS RECOMMENDED BY THE MANUFACTURER. PROTECT SEALED ASPHALT PAVEMENT SURFACE FROM VEHICLE AND FOOT TRAFFIC UNTIL CURED.
- SITE CONCRETE: ALL WORK TO CONFORM TO ACI STANDARDS.
 - COMPRESSIVE STRENGTH (PSI) AT 28 DAYS, MAXIMUM W/C RATIO OF 0.5, 4 INCH MAXIMUM SLUMP.
 - PAVEMENTS: 4,000 (MINIMUM)
 - SIDEWALKS: 3,000 (MINIMUM)
 - CURBS AND GUTTERS: 3,000 (MINIMUM)
 - JOINTS: ALIGN CURB, GUTTER, AND SIDEWALK JOINTS.
 - PROVIDE SCORED JOINTS AT 5 FOOT MAXIMUM INTERVALS, EVENLY SPACED, BETWEEN SIDEWALKS AND CURBS, BETWEEN CURBS AND PAVEMENT, OR AS INDICATED ON PLAN.
 - PROVIDE EXPANSION JOINTS EVERY FOURTH JOINT TO SEPARATE PAVING FROM VERTICAL SURFACES AND UTILITY PENETRATIONS, OR AS INDICATED ON PLAN.
 - FINISHING:
 - PAVEMENTS: BROOM FINISH, PERPENDICULAR TO DIRECTION OF TRAVEL
 - SIDEWALKS: LIGHT BROOM, PERPENDICULAR TO DIRECTION OF TRAVEL, TROWELED AND RADIUS EDGE, 1/8 TO 1/4 INCH RADIUS.
 - CURBS AND GUTTERS: LIGHT BROOM, PARALLEL TO PAVEMENT DIRECTION.
- PAINTED PAVEMENT MARKINGS:
 - PAINT: MPI NO. 87 (OR EQUAL) LATEX TRAFFIC MARKING PAINT, WHITE (FOR STANDARD PARKING STRIPING) OR AS INDICATED ON PLAN.
 - PREPARATION: CLEAN PAVEMENT SURFACES THOROUGHLY PRIOR TO INSTALLATION. PREPARE SURFACES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - INSTALLATION: APPLY PAINT WHEN PAVEMENT SURFACE OR THE ATMOSPHERE TEMPERATURE IS BETWEEN 50 DEGREES AND 95 DEGREES F. APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. APPLY PAINT IN ONE COAT ONLY. FOR SYMBOLS, UTILIZE A TEMPLATE THAT WILL PROVIDE TRUE, SHARP EDGES AND ENDS FOR THE PAVEMENT MARKING. PROTECT NEWLY PAINTED MARKINGS FROM DISTURBANCE AND TRACKING.
 - PAVEMENT MARKING REMOVAL: SANDBLAST OR OTHER METHOD OF COMPLETE REMOVAL OF SPECIFIED MARKING. BLACKOUT METHODS MUST BE APPROVED BY THE OWNER.

PRIVATE UTILITY SPECIFICATION NOTES:

- PRODUCTS:
 - DOMESTIC WATER:
 - PLASTIC PIPE CONFORMING TO THE STATE PLUMBING CODE, LATEST EDITION, WITH PRESSURE RATED FITTINGS PER MANUFACTURER RECOMMENDATIONS.
 - BACKFLOW PREVENTER: CONTRACTOR TO CONFIRM WITH AGENCY HAVING JURISDICTION (AHJ). IF AHJ DOES NOT SPECIFY, USE DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY COMPLIANT WITH THE STATE PLUMBING CODE, LATEST EDITION. IF REQUIRED, REDUCED PRESSURE DEVICES SHALL BE INSTALLED ABOVE GRADE IN A HEATED ENCLOSURE.
 - FIRE WATER:
 - PLASTIC PIPE CONFORMING TO AWWA C900, RATED FOR 200 PSI MINIMUM, WITH MECHANICAL JOINT FITTINGS/RESTRAINTS PER MANUFACTURER RECOMMENDATIONS.
 - BACKFLOW PREVENTER: CONTRACTOR TO CONFIRM WITH AGENCY HAVING JURISDICTION (AHJ). IF AHJ DOES NOT SPECIFY, USE DOUBLE CHECK DETECTOR FIRE PROTECTION BACKFLOW PREVENTION ASSEMBLY COMPLIANT WITH THE STATE PLUMBING CODE.
 - SANITARY SEWER:
 - PLASTIC PIPE COMPLIANT WITH THE STATE PLUMBING CODE, LATEST EDITION, WITH ELASTOMERIC GASKETED WYE FITTINGS PER MANUFACTURER RECOMMENDATIONS.
 - STORM DRAINAGE:
 - PLASTIC PIPE COMPLIANT WITH THE STATE PLUMBING CODE, LATEST EDITION, WITH ELASTOMERIC GASKETED WYE FITTINGS PER MANUFACTURER RECOMMENDATIONS.
 - TRACER WIRE:
 - MAGNETIC DETECTABLE CONDUCTOR, CLEAR PLASTIC COVERING, IMPRINTED WITH THE NAME OF THE TYPE OF UTILITY SERVICE (I.E. "STORM SEWER SERVICE") IN LARGE LETTERS.
- TRENCHING, BEDDING, AND BACKFILL:
 - THE PREPARED SUBGRADE SHALL BE EVALUATED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING PIPE BEDDING MATERIAL.
 - EXCAVATE UNSUITABLE TRENCH BOTTOM MATERIALS AND REPLACE WITH TRENCH STABILIZATION MATERIAL PLACED AND COMPACTED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. UNLESS DIRECTED OTHERWISE, TRENCH STABILIZATION MATERIAL SHALL BE 1/4 INCH TO 4 INCH, WELL GRADED CRUSHED ROCK OR CRUSHED GRAVEL FREE OF DELETERIOUS MATERIALS WITH LESS THAN 5 PERCENT PASSING THE U.S. STANDARD NO. 200 SIEVE WHEN TESTED IN ACCORDANCE WITH ASTM C 117.
 - PIPE BEDDING AND PIPE ZONE MATERIAL SHALL BE IMPORTED GRANULAR MATERIAL, 3/4 INCH-MINUS SIZE, WITH THE EXCEPTION THAT THE PERCENT PASSING THE U.S. STANDARD NO. 200 SIEVE SHALL BE LESS THAN 8 PERCENT BY DRY WEIGHT WHEN TESTED IN ACCORDANCE WITH ASTM C 117.
 - SPREAD BEDDING AND GRADE SO PIPE IS UNIFORMLY SUPPORTED ALONG THE BARREL. EXCAVATE BELL HOLES AT EACH JOINT TO PERMIT ASSEMBLY AND EVALUATION OF THE ENTIRE JOINT; BACKFILL THE TRENCH TO 12 INCHES ABOVE THE TOP OF THE PIPE WITH PIPE ZONE MATERIAL.
 - PLACE PIPE ZONE MATERIAL IN LOOSE LIFTS NOT EXCEEDING 6 INCHES IN UNCOMPACTED THICKNESS SIMULTANEOUSLY ON BOTH SIDES OF THE PIPE.
 - CAREFULLY WORK PIPE ZONE MATERIAL UNDER THE SIDES OF THE PIPE BY SLICING WITH A SHOVEL OR OTHER APPROVED PROCEDURE TO PROVIDE A FIRM BACKING FOR THE PIPE AND PREVENT LATERAL MOVEMENT OF THE PIPE.
 - COMPACT PIPE ZONE MATERIAL TO 90 PERCENT OF THE MAXIMUM DRY DENSITY OR AS RECOMMENDED BY THE PIPE MANUFACTURER. BACKFILL THE REMAINDER OF THE TRENCH WITH IMPORTED GRANULAR MATERIAL OR AS SPECIFIED BY THE GEOTECHNICAL ENGINEER.
 - IN PAVED AREAS: COMPACT BACKFILL ABOVE PIPE ZONE TO AT LEAST 95% OF MAXIMUM DRY DENSITY, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- INSTALLATION:
 - PIPE COVER: MAINTAIN MINIMUM 36 INCH COVER OVER ALL UTILITY PIPING, UNLESS NOTED OTHERWISE ON PROJECT PLANS. IN NO CASE SHALL FIRE WATER BE INSTALLED AT LESS THAN 36 INCH COVER IN PAVEMENT AREAS. PROVIDE CONCRETE CAP (FC=2,500PSI) OVER PIPES WITH LESS THAN 12 INCHES COVER IN VEHICULAR AREAS (OR SUBMIT TO THE ENGINEER FOR APPROVAL ALTERNATE PIPE MATERIAL CAPABLE OF WITHSTANDING PREDICTED LOADS AND/OR TO PREVENT DAMAGE, I.E. DUCTILE IRON, REINFORCED CONCRETE, ETC.). IN CASES WHERE CONCRETE CAP MAY BECOME EXPOSED OR IMPEDE THE INSTALLATION OF SURFACE PAVEMENTS, NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION AND AWAIT APPROVAL TO PROCEED OR ALTERNATE DESIGN.
 - SANITARY SEWER AND WATER PIPES: WHERE SANITARY SEWER PIPING WILL BE INSTALLED WITHIN 10 FEET OF A DOMESTIC WATER PIPE, AND AS APPROVED BY THE LOCAL BUILDING OFFICIAL, THE SANITARY PIPE SHALL BE MADE OF A MATERIAL APPROVED FOR USE WITHIN A BUILDING (I.E. PVC SCHEDULE 40), HOWEVER, IN NO CASE SHALL THE SANITARY LINE BE LOCATED WITHIN 12 INCHES OF A DOMESTIC WATER LINE (BOTH HORIZONTALLY AND VERTICALLY).
 - PIPE CROSSINGS/SEPARATION: MAINTAIN MINIMUM SEPARATION OF WATER MAIN FROM SEWER PIPING IN ACCORDANCE WITH LOCAL AGENCY AND STATE PLUMBING CODES, LATEST EDITIONS. WHERE NOT REGULATED BY CODE, MAINTAIN A MINIMUM OF 12 INCH VERTICAL SEPARATION AT PIPE CROSSINGS.
 - GRAVITY SYSTEMS: MAINTAIN MINIMUM SLOPES AS DEFINED BY LOCAL AGENCY AND STATE PLUMBING CODES. WHERE NOT REGULATED BY CODE OR INDICATED ON PLANS, MAINTAIN A MINIMUM OF 1.0% SLOPE ON ALL SANITARY SEWER PIPING AND 0.5% ON ALL STORM DRAIN PIPING UNLESS NOTED OTHERWISE ON PROJECT PLANS.
 - PIPE OUTLETS: IF NOT SPECIFIED ON PLANS, ALL EXPOSED PIPE INLETS AND OUTLETS SHALL BE PROPERLY STABILIZED WITH RIP RAP OR TRIMMED FLUSH WITH THE ADJACENT GRADE (SLOPED OR VERTICAL) AND PROVIDED WITH AN APPROPRIATE HEADWALL FEATURE. PROVIDE HINGED OR REMOVABLE TRASH RACK OR RODENT GUARD.
 - CATCH BASINS: ALL CATCH BASINS TO HAVE A 24 INCH MINIMUM SUMP AND HOODED OUTLET UNLESS NOTED OTHERWISE ON PROJECT PLANS.
 - MANHOLES: ALL SANITARY MANHOLES SHALL BE CHANNELIZED. STORM MANHOLES SHALL PROVIDE A 24 INCH SUMP UNLESS OTHERWISE SPECIFIED ON PROJECT PLANS. ENSURE WATERTIGHT SEAL AT ALL PIPE PENETRATIONS TO MANHOLES. LIDS SHALL BE MARKED TO IDENTIFY TYPE OF UTILITY.
 - CLEANOUTS: CLEANOUTS SHALL BE PROVIDED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE, LATEST EDITION (AT A MINIMUM, EVERY 100 LINEAL FEET OF PIPE RUN OR EVERY 135 DEGREE OF CUMULATIVE ANGLE). CLEANOUTS SHALL BE OF THE SAME SIZE OF THE PIPE THEY ARE SERVING. LIDS SHALL BE MARKED TO IDENTIFY TYPE OF UTILITY.
 - BACKFLOW PREVENTERS: BACKFLOW PREVENTERS SHALL BE INSTALLED IN A COMPLIANT UNDERGROUND VAULT (EXCEPT REDUCED PRESSURE DEVICES) WITH SUMP PUMP DISCHARGING TO AN APPROVED DISCHARGE POINT. VAULT SHALL BE SIZED TO ACCOMMODATE THE INSTALLATION OF AN FDC ON THE DOWNSTREAM END WITHIN THE VAULT, EVEN IF THE FDC IS NOT INSTALLED AT TIME OF VAULT INSTALLATION. REDUCED PRESSURE DEVICES SHALL BE INSTALLED IN AN ABOVE GROUND HEATED ENCLOSURE, UNLESS THE AUTHORITY HAVING JURISDICTION ALLOWS FOR INSTALLATION IN A VAULT.
 - MECHANICAL JOINT RESTRAINTS: UNLESS NOTED OTHERWISE, ALL FIRE WATER SUPPLY SYSTEMS SHALL BE PROVIDED WITH MECHANICAL JOINT RESTRAINTS AT FITTINGS, CALCULATED AND SIZED BASED ON PROJECT CONDITIONS. CONTRACTOR SHALL PROVIDE RESTRAINT LENGTH SIZING CALCULATIONS WITH WATER SYSTEM PRODUCT SUBMITTAL.



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SHEET TITLE:
**CIVIL
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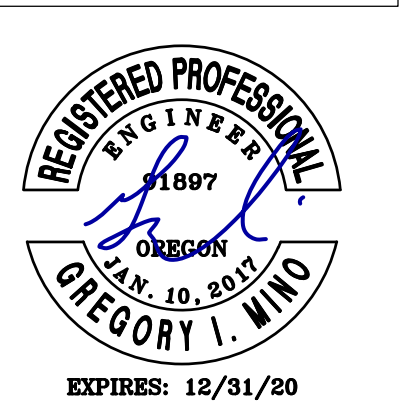
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JOB NO. **2190365.00**



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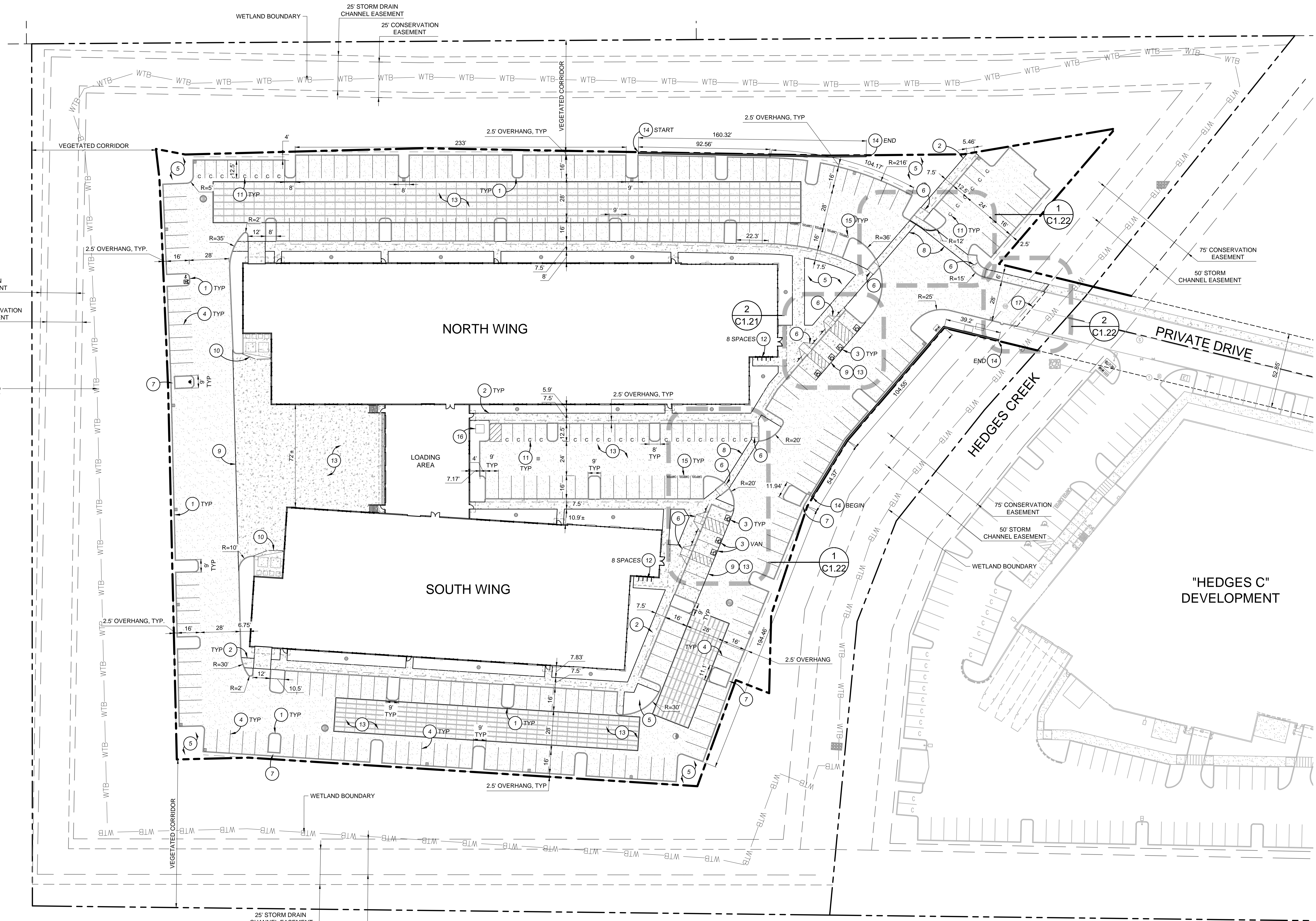
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SHEET TITLE:
SITE PLAN

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JOB NO. **2190365.00**

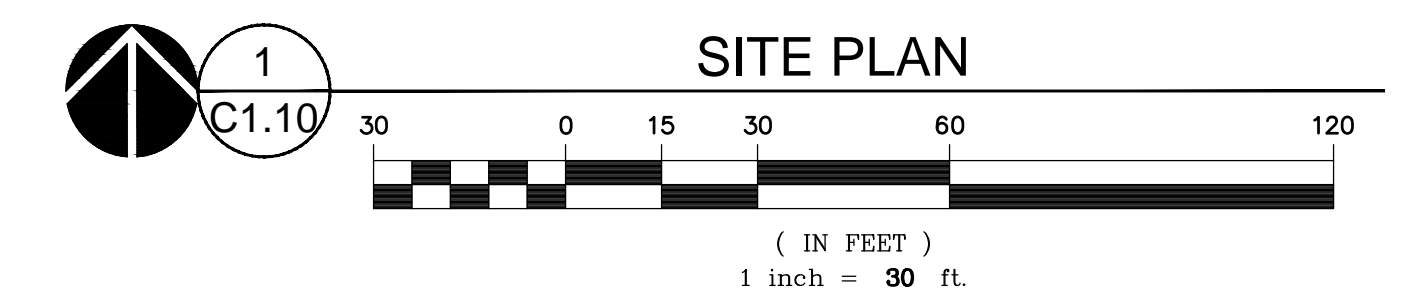
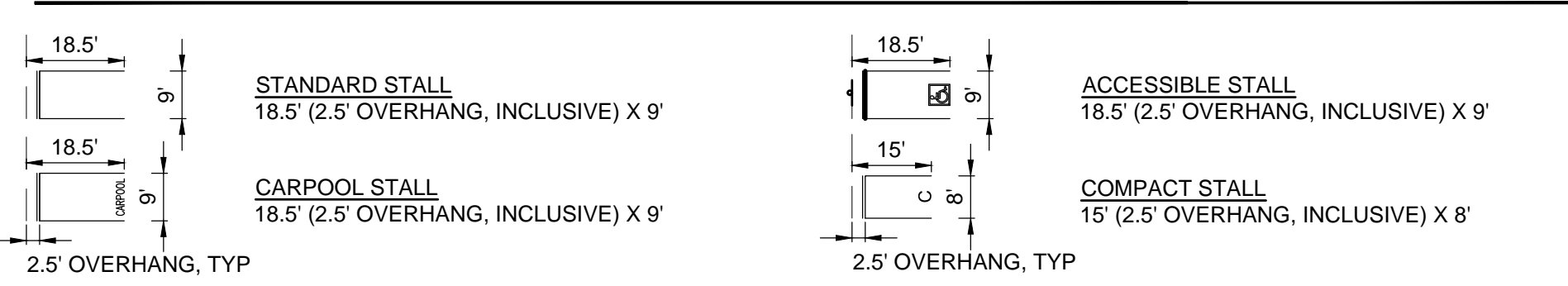


PAVEMENT LEGEND

*PAVEMENT SECTIONS SHOWN BELOW REFER TO THE GEOTECHNICAL REPORT BY GEOENGINEERS, INC. DATED JULY 10, 2019. ALL RECOMMENDATIONS THEREIN SHALL BE FOLLOWED.

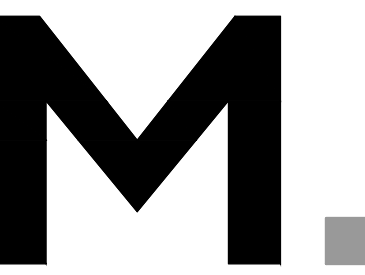
- ASPHALT PAVEMENT SECTION**
ASPHALTIC CONCRETE (AC) OVER CRUSHED ROCK BASE (CRB) OVER COMPACTED SUBGRADE PER GEOTECHNICAL REQUIREMENTS
- DRIVE AISLES: 4.0" AC OVER 11.0" CRB
PARKING STALLS: 3.0" AC OVER 8.0" CRB
- CONCRETE PAVEMENT SECTION**
PORTLAND CEMENT CONCRETE (PCC) OVER CRUSHED ROCK BASE (CRB) OVER COMPACTED SUBGRADE PER GEOTECHNICAL REQUIREMENTS
- SITE SLABS-ON-GRADE: 6.0" PCC OVER 6.0" CRB, REINFORCED W/ #4 REBAR @ 12" OC, EW
SIDEWALKS: 4.0" PCC OVER 2.0" CRB, REINFORCED W/ #4 REBAR @ 24" OC, EW

PARKING LEGEND



KEYNOTES

- 6" CONCRETE VERTICAL CURB PER 3/C5.10
- CONCRETE SIDEWALK PER 1/C5.10
- ACCESSIBLE PARKING STALL PER 2/C5.10
- 4" WHITE PARKING STRIPE PER 4/C5.10
- LANDSCAPE AREA PER LANDSCAPE PLANS
- ACCESSIBLE RAMP PER 8,9,10/C5.10
- CONCRETE CURB CHANNEL FOR DRAINAGE PER 11/C5.10
- CROSSWALK WITH CONTRASTING SLIP RESISTANT CONCRETE PER 5/C5.10
- ASPHALT TO CONCRETE TRANSITION PER 6/C5.10
- TRASH ENCLOSURE PER ARCHITECTURAL PLANS
- COMPACT PARKING PER 4/C5.10
- BIKE PARKING PER ARCHITECTURAL PLANS
- PAVED SURFACE PER PAVING LEGEND
- SCHEMATIC DESIGN BUILD WALL PER 12/C5.10 BY OTHERS
- CARPOOL PARKING PER 4/C5.10
- BUILDING TRANSFORMER ON CONCRETE PAD PER ELECTRIC SERVICE PROVIDER
- ASPHALT TRANSITION TO BRIDGE BY SAWCUTTING ASPHALT 12" FROM EDGE, DOWN 12" OR UNTIL EXPOSING CONCRETE BRIDGE STRUCTURE. ABUT PROPOSED CRUSHED ROCK BASE UP TO BRIDGE AND EXTEND NEW PAVEMENT SECTION INTO SAWCUT AREA.



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SHEET TITLE:
GRADING PLAN

DRAWN BY: GIM

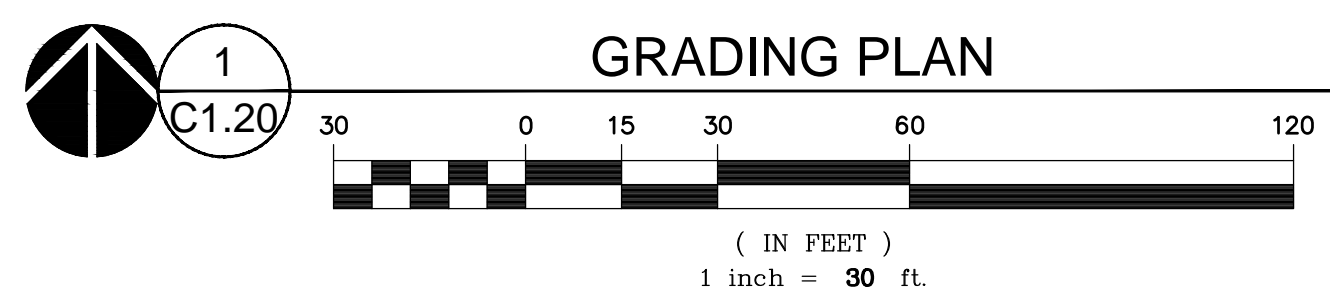
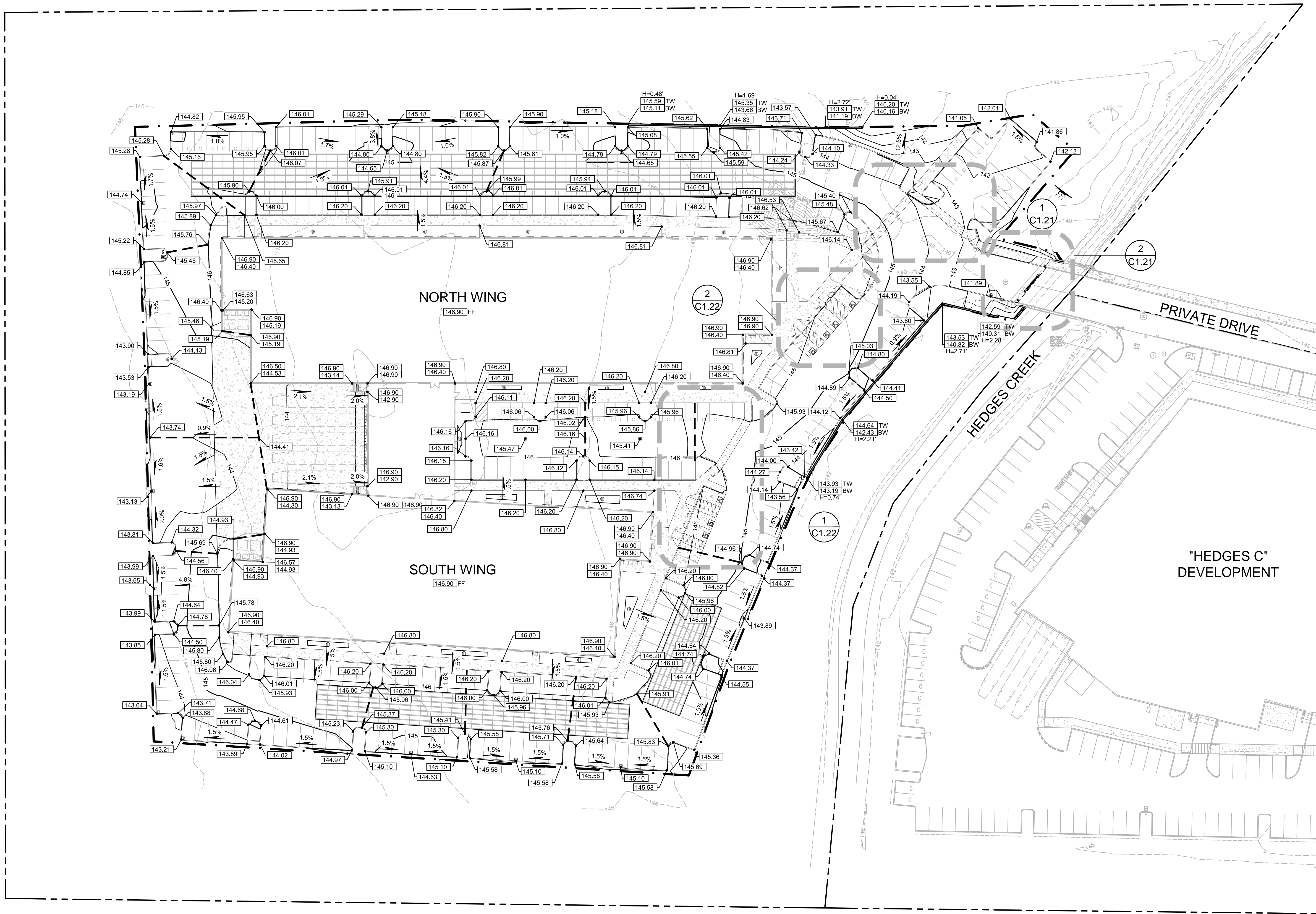
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JOB NO. **2190365.00**

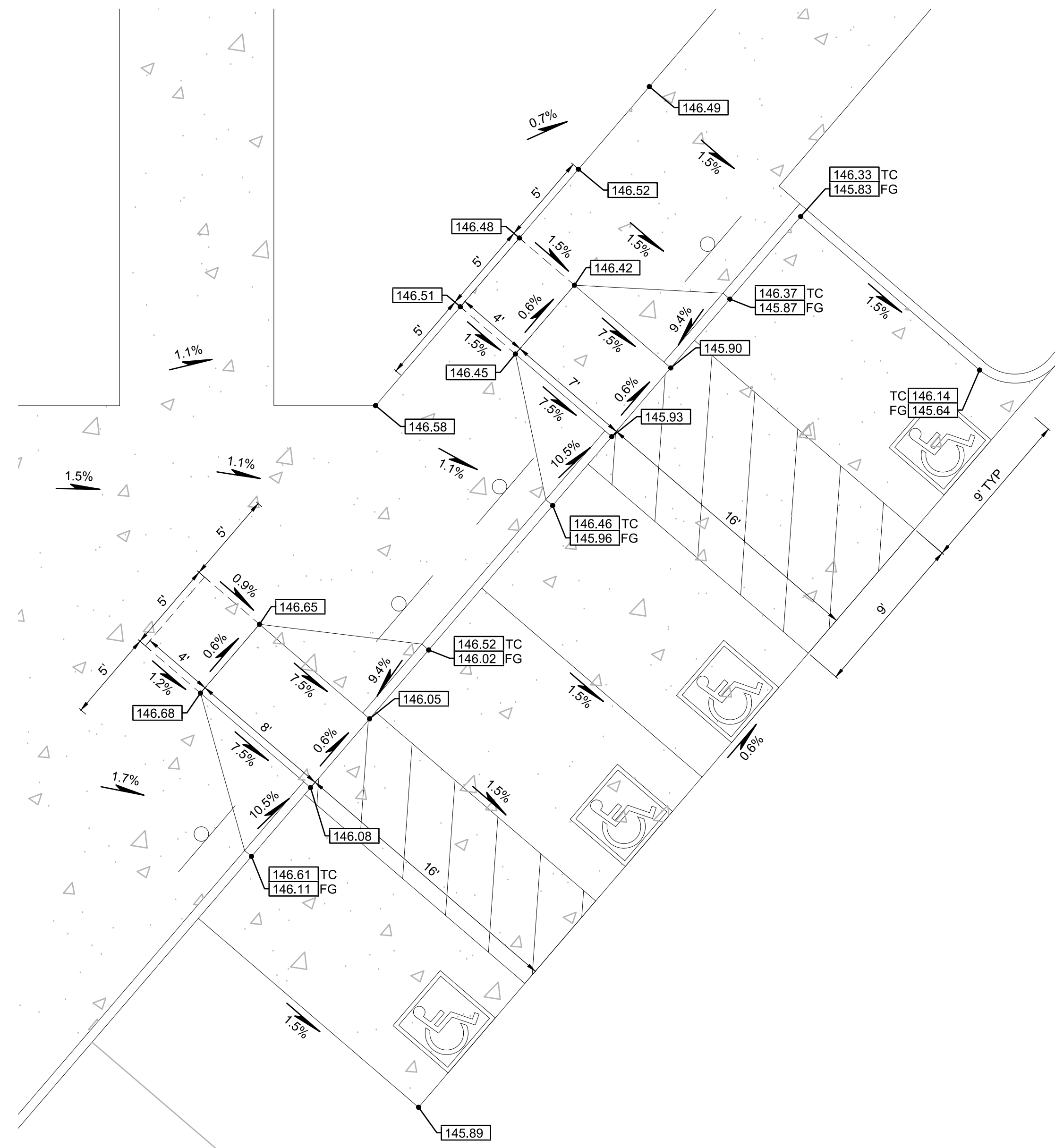
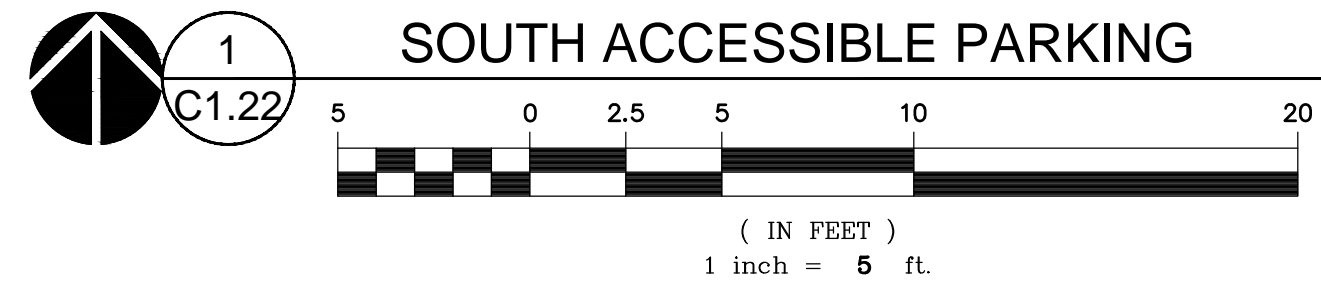
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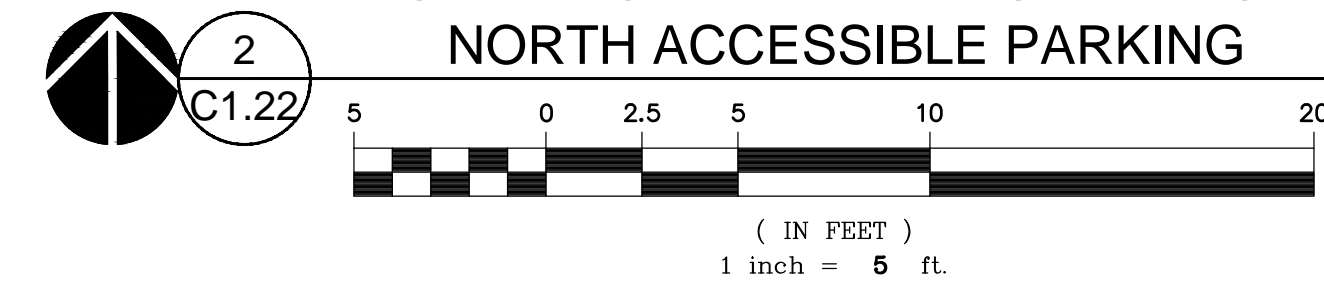
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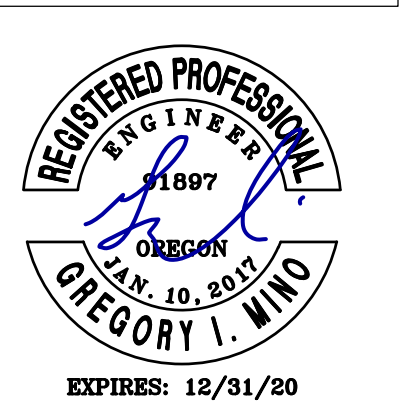


**GRADING PLAN ENLARGEMENTS -
SOUTH ACCESSIBLE PARKING**



**GRADING PLAN ENLARGEMENTS -
NORTH ACCESSIBLE PARKING**





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SHEET TITLE:
UTILITY PLAN

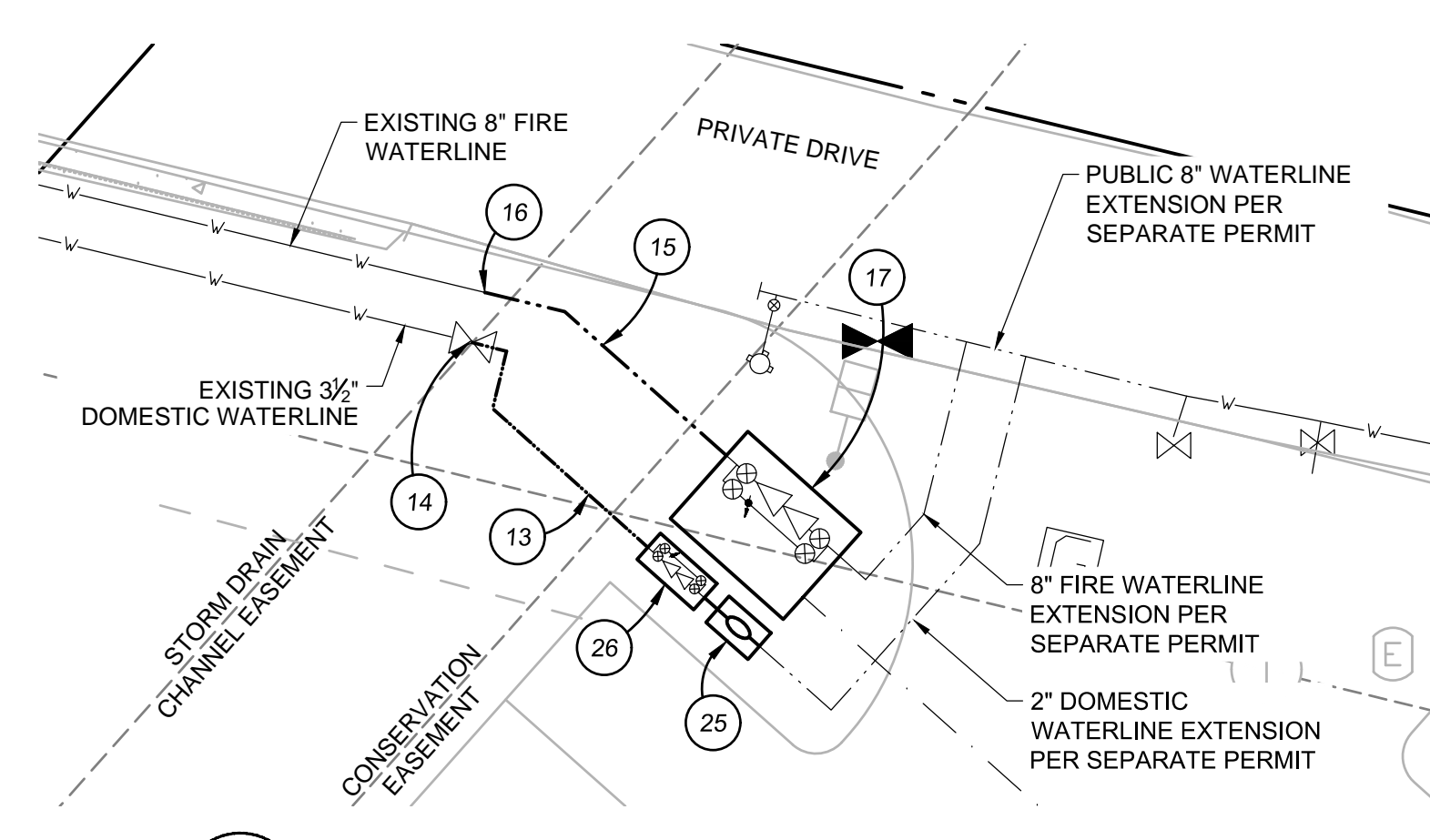
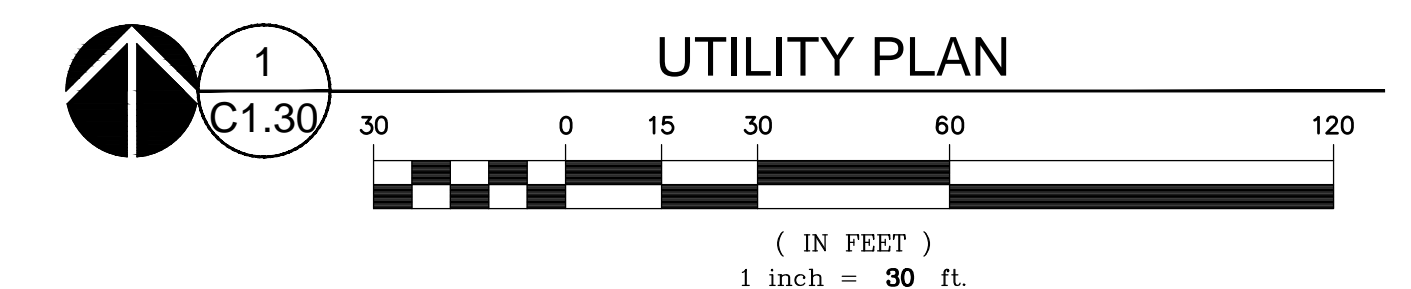
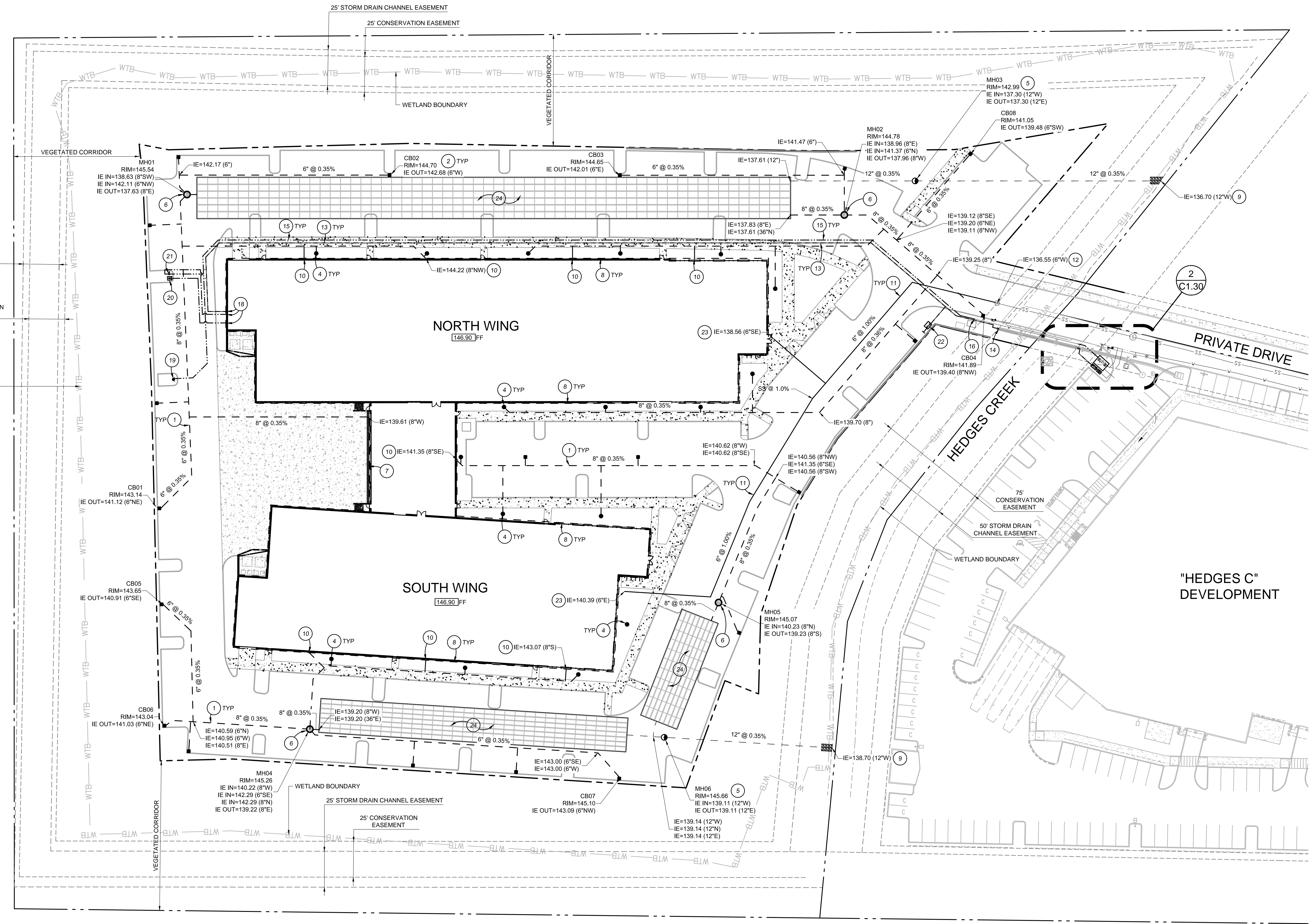
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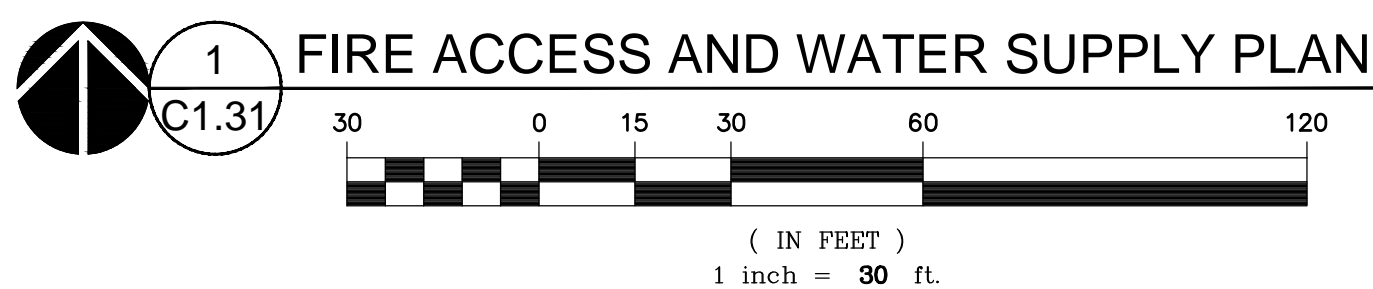
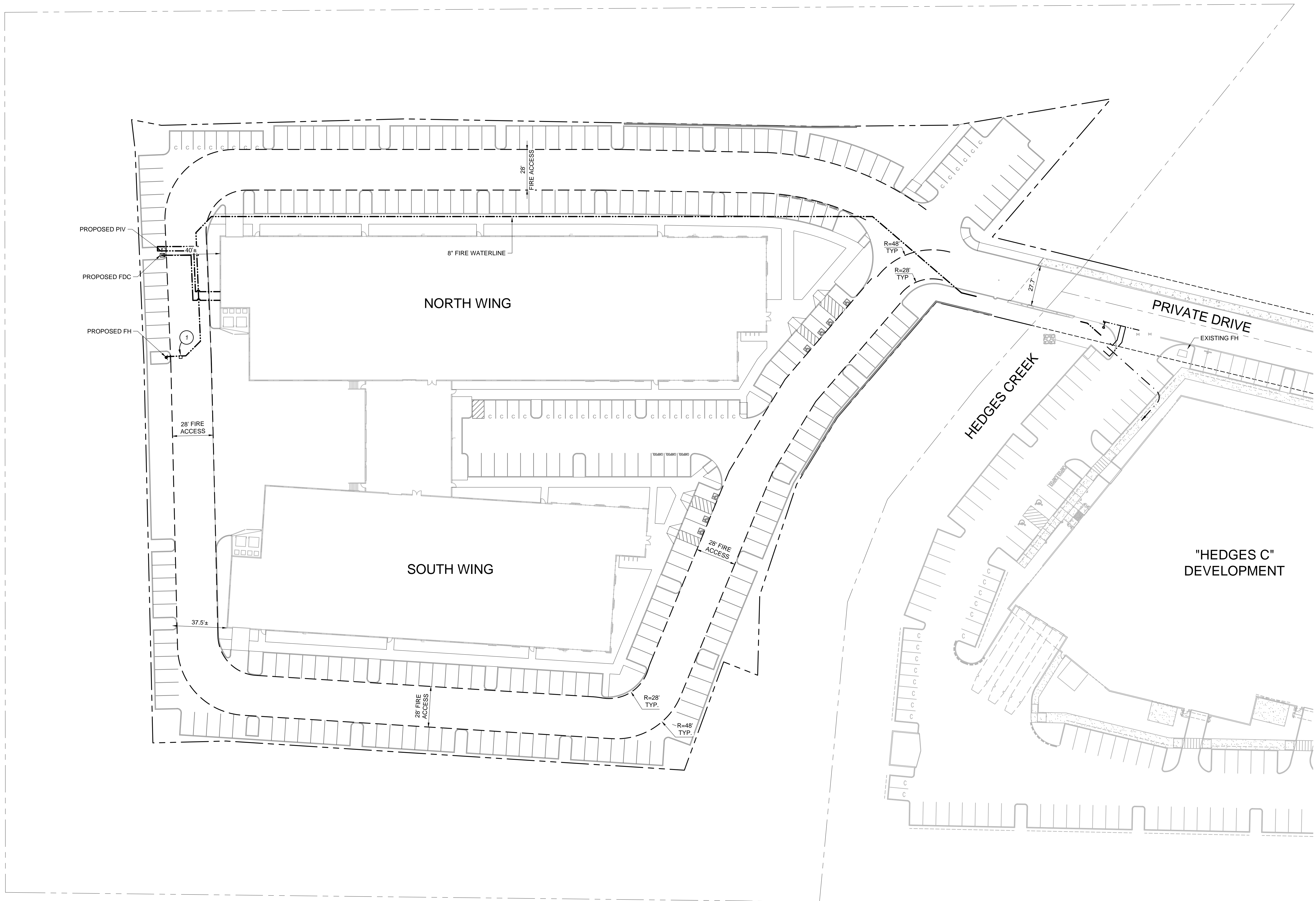
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JOB NO. **2190365.00**



KEYNOTES

- INSTALL STORM PIPE, SIZE PER PLAN, TRENCHING PER 2/C5.12 AND PROJECT SPECIFICATIONS
- INSTALL CATCH BASIN PER 1/C5.11
- INSTALL STORM MANHOLE PER 2/C5.11
- INSTALL LANDSCAPE AREA DRAIN PER 6/C5.11
- INSTALL FLOW CONTROL MANHOLE PER 4/C5.11
- INSTALL WATER QUALITY MANHOLE PER 8/C5.11
- TRENCH DRAIN PER 6/C5.12
- INSTALL 4" DIAMETER PERFORATED PIPE PLACED ON A 3" BED OF, AND SURROUNDED BY 6" OF DRAINAGE MATERIAL ENCLOSED IN A NON-WOVEN GEOTEXTILE SUCH AS MIRAFI 140N (OR APPROVED ALTERNATE). PERIMETER DRAINS SHOULD BE SLOPED TO DRAIN BY GRAVITY TO A SUITABLE DISCHARGE POINT. RECOMMEND THAT CLEANOUTS BE COVERED AND PLACED IN FLUSH-MOUNTED UTILITY BOXES. PROVIDE BACKWATER VALVE PER 3/C5.11.
- OUTFALL TO CREEK, PROVIDE RIP RAP PAD PER 7/C5.11
- JOIN BUILDING STORM PLUMBING/DOWNSPOUT SYSTEM. INSTALL ADAPTER TO DOWNSPOUT AS REQUIRED
- INSTALL SANITARY PIPE, SIZE PER PLAN, TRENCHING PER 2/C5.12 AND PROJECT SPECIFICATIONS
- JOIN SANITARY LINE AT EXISTING CLEANOUT
- INSTALL 2" DOMESTIC WATER PIPE AND TRENCHING PER 2/C5.12 AND PROJECT SPECIFICATIONS
- JOIN PROPOSED 2" DOMESTIC LINE TO EXISTING 3/2" WATERLINE
- INSTALL 8" FIRE WATER PIPE AND TRENCHING PER 2/C5.12 AND PROJECT SPECIFICATIONS
- JOIN PROPOSED 8" FIREWATER LINE TO EXISTING 8" WATERLINE
- INSTALL DOUBLE CHECK DETECTOR VALVE AND VAULT PER 1/C5.12. CONNECT PROPOSED 8" FIRE WATER LINE
- JOIN BUILDING WATER SYSTEM
- INSTALL FIRE HYDRANT PER 3/C5.12
- INSTALL FIRE DEPARTMENT CONNECTION PER 5/C5.12. CHECK VALVE INSIDE BUILDING PER FIRE SPRINKLER PLANS
- POST INDICATOR VALVE PER 4/C5.12
- INSTALL IRRIGATION BACKFLOW PREVENTOR AND STUB
- JOIN BUILDING SANITARY SYSTEM
- INSTALL ADS STORMTECH SC-740 CHAMBER SYSTEM
- INSTALL 2" WATER METER PER CITY OF TUALATIN DRAWING NO. 633 (7/C5.12)
- INSTALL 2" RPBA PER CITY OF TUALATIN DRAWING NO. 608 (8/C5.12)



GENERAL NOTES

1. FIRE DEPARTMENT ACCESS ROADS ON SITE ARE DESIGNED TO SUPPORT AN APPARATUS WEIGHING 75,000 LB. GROSS VEHICLE WEIGHT.
2. ALL FIRE DEPARTMENT ACCESS ROADS SHOWN ON PLANS HAVE A TURNING RADIUS OF 20 FEET (INSIDE) AND 48 FEET (OUTSIDE), UNLESS OTHERWISE NOTED.
3. PROVIDE EMERGENCY ACCESS EASEMENTS AS REQUIRED BY TUALATIN VALLEY FIRE AND RESCUE.

FIRE HYDRANT NOTES

1. PRIVATE FIRE HYDRANTS IN THE CITY OF TUALATIN SHALL BE YELLOW IN COLOR (OFC 507).
2. FIRE HYDRANT LOCATIONS SHALL BE IDENTIFIED BY THE INSTALLATION OF BLUE REFLECTIVE MARKERS. THEY SHALL BE LOCATED ADJACENT AND TO THE SIDE OF THE CENTER LINE OF THE ACCESS ROADWAY THAT THE FIRE HYDRANT IS LOCATED ON. IN THE CASE THAT THERE IS NO CENTERLINE, THEN ASSUME A CENTER LINE AND PLACE THE REFLECTORS ACCORDINGLY (OFC 507).
3. WHERE FIRE HYDRANTS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, GUARD POSTS, BOLLARDS OR OTHER APPROVED MEANS OF PROTECTION SHALL BE PROVIDED (OFC 507.5.6 & OFC 312).
4. A 3-FOOT CLEAR SPACE SHALL BE PROVIDED AROUND THE CIRCUMFERENCE OF ALL FIRE HYDRANTS (OFC 507.5.5).

FIRE DEPARTMENT CONNECTION (FDC) NOTES

1. FDCs SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT (OR AS APPROVED). HYDRANTS AND FDCs SHALL BE LOCATED ON THE SAME SIDE OF THE FIRE APPARATUS ACCESS ROADWAY OR DRIVE AISLE, FULLY VISIBLE, AND RECOGNIZABLE FROM THE STREET OR NEAREST POINT OF THE FIRE DEPARTMENT VEHICLE ACCESS OR AS OTHERWISE APPROVED (OFC 912.2.1 & NFPA 13).
2. FIRE DEPARTMENT CONNECTIONS (FDCs) SHALL NORMALLY BE LOCATED REMOTELY AND OUTSIDE OF THE FALL-LINE OF THE BUILDING WHEN REQUIRED. FDCs MAY BE MOUNTED ON THE BUILDING THEY SERVE, WHEN APPROVED.
3. FDCs SHALL BE PLUMBED ON THE SYSTEM SIDE OF THE CHECK VALVE WHEN SPRINKLERS ARE SERVED BY UNDERGROUND LINES ALSO SERVING PRIVATE FIRE HYDRANTS.

PAINTED CURB NOTES

WHERE REQUIRED, FIRE APPARATUS ACCESS ROADWAY CURBS SHALL BE PAINTED RED (OR AS APPROVED) AND MARKED "NO PARKING FIRE LANE" AT 25 FOOT INTERVALS. LETTERING SHALL HAVE A STROKE OF NOT LESS THAN ONE INCH WIDE BY SIX INCHES HIGH. LETTERING SHALL BE WHITE ON RED BACKGROUND (OR AS APPROVED) (OFC 503.3).

KEYNOTES

1. BLUE REFLECTIVE MARKER. SEE FIRE HYDRANT NOTE #2



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SHEET TITLE:
**FIRE ACCESS
 AND WATER
 SUPPLY PLAN**

DRAWN BY: GIM

CHECKED BY: MWB

SHEET

C1.31

JOB NO. **2190365.00**

"HEDGES D" EROSION AND SEDIMENT CONTROL PLAN (1200-C)

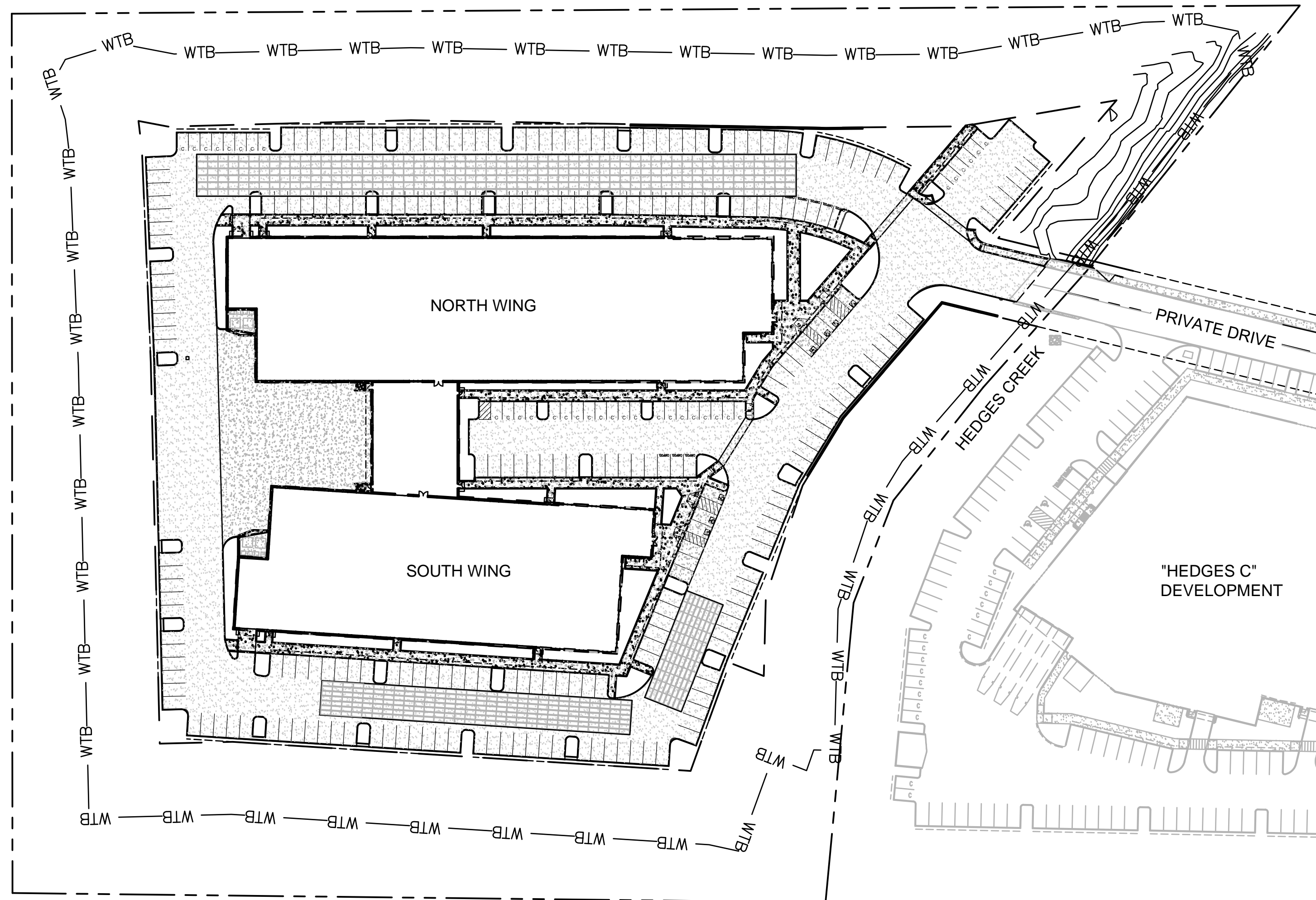
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TAX LOTS 100, 800, 1100
2S101CA00100, 2S101CA00800, 2S1010001100
WASHINGTON COUNTY, OREGON

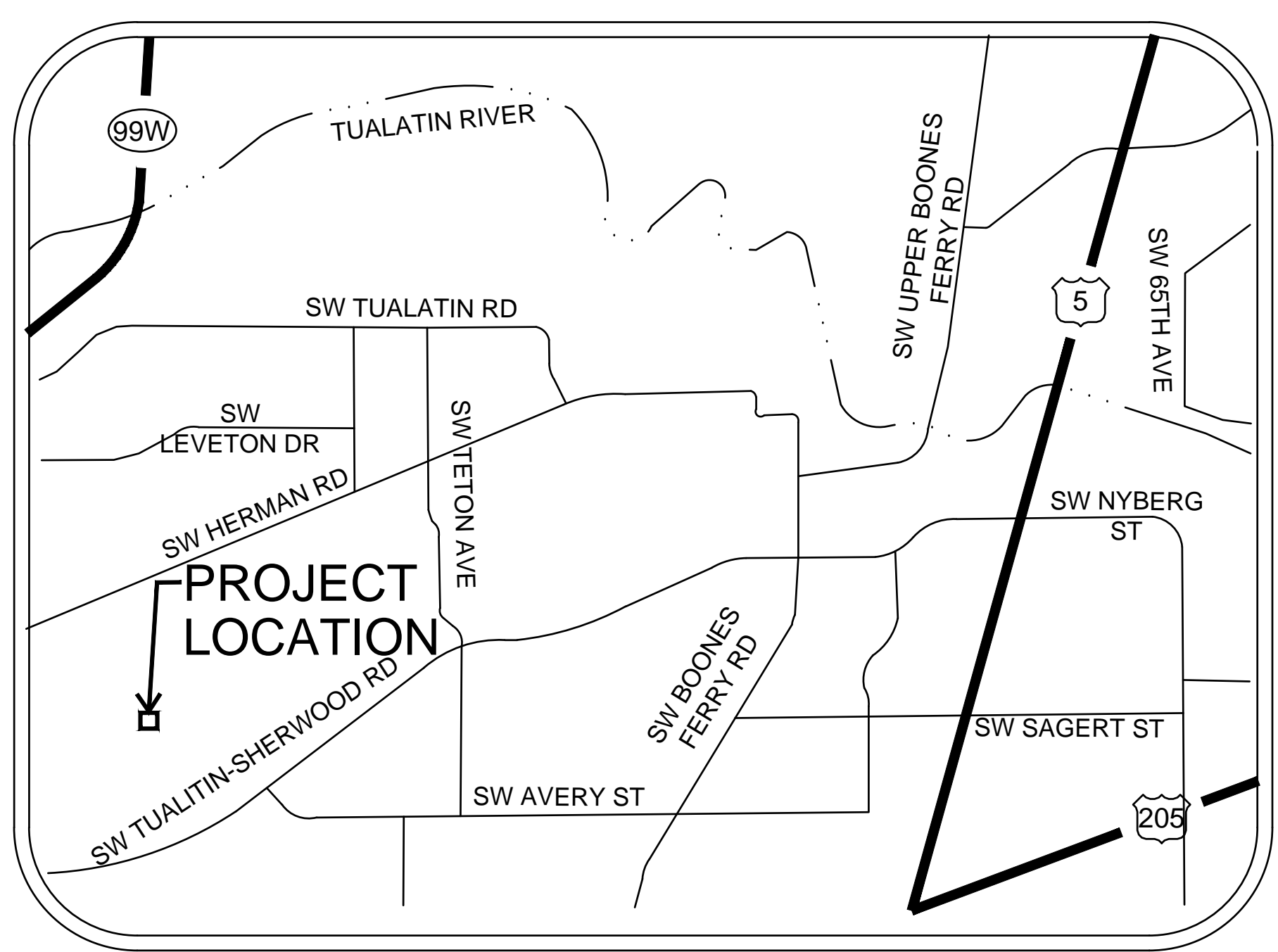
STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

SCHEDULE NOTATIONS REFER TO D.E.Q. GENERAL PERMIT LANGUAGE

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I(3))
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.12.B AND SCHEDULE B.1)
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SCHEDULE B.1.C AND B.2)
- RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, THE ABOVE RECORDS MUST BE RETAINED BY THE PERMIT REGISTRANT BUT DO NOT NEED TO BE AT THE CONSTRUCTION SITE. (SCHEDULE B.2.C)
- ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A.8.A)
- THE ESCP MUST BE ACCURATE AND REFLECT THE SITE CONDITIONS. (SCHEDULE A.12.C.I)
- SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SCHEDULE A.12.C.IV AND V)
- PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A.7.A.III)
- IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BELIEVED TO BE SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) & (2))
- PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICAL BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.A.V)
- MAINTAIN AND DELINEATE AND EXISTING NATURAL BUFFER WITHIN THE 50-FOE OF WATER OF THE STATE. (SCHEDULE A.7.B.I AND (2)(A)(3))
- INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SCHEDULE A.8.C.I.(5))
- CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SCHEDULE A.7.C)
- CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SCHEDULE A.7.D.I)
- ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
- APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATION MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS. (SCHEDULE A.8.C.I.(3))
- ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
- PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND-DISTURBING ACTIVITIES. (SCHEDULE A.7.D.II AND A.8.C.I.(4))
- WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(5))
- CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS. (SCHEDULE A.8)
- USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS, VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE, OTHER CLEANING AND MAINTENANCE ACTIVITIES, AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
- IMPLEMENT THE FOLLOWING BMPs WHEN APPLICABLE. EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES. SPILL KITS IN ALL VEHICLES. REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY. MATERIAL DELIVERY AND STORAGE CONTROLS. TRAINING AND SIGNAGE AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCHEDULE A.7.E.III)
- USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A.7.A.IV)
- THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.8.B.II)
- IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
- TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A.7.B)
- AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPs MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A.7.E.II.(2))
- CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER. (SCHEDULE A.7.A.I)
- SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GRADE FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.8.C.I)
- OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SCHEDULE A.8.C.I)
- CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.8.C.II & I)
- WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
- THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGEWAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
- THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH OR COMPOST MULCH. OR DRY SWEEPING AND MATERIAL PICKUP ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F)
- PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER. LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
- DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. (SCHEDULE A.8.C.III.I) AND D.3.C.II AND III)



SITE PLAN
1"=80'



VICINITY MAP
NTS TIGARD, OR

PROJECT LOCATION:
CITY OF TUALATIN DOWN A PRIVATE DRIVE WEST FROM SW AMU STREET AND SW 115TH STREET

LATITUDE = 45°22'28"
LONGITUDE = -122°47'57"

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 852-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6669.

GENERAL NOTE:

THIS PLAN SHOWS THE MINIMUM SUGGESTED LEVEL OF EROSION AND SEDIMENT CONTROL PROTECTION REQUIRED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT ADDITIONAL MEASURES AS NECESSARY TO COMPLY WITH ALL PERMITS, LOCAL, AND STATE REQUIREMENTS.

DEVELOPER

MARTIN DEVELOPMENT
98115 PO BOX 15523
SEATTLE, WA
CONTACT: MAC MARTIN
PHONE: (206) 399-6678
macmartin@gmail.com

CIVIL ENGINEERING

MACKENZIE
CONTACT: GREG MINO
1515 SE WATER AVE
PORTLAND, OR 97214
PHONE: 503-224-9560
gmino@mcknzie.com

SURVEYOR

WEDDLE SURVEYING INC.
CONTACT: ANTHONY RYAN
6950 SW HAMPTON ST., STE. 170
TIGARD, OR 97223
PHONE: 503-941-9585
office@weddesurveying.com

PROPERTY DESCRIPTION:

CITY OF TUALATIN DOWN A PRIVATE DRIVE WEST FROM SW AMU STREET AND SW 115TH STREET

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* UNDEVELOPED LAND WITH WETLANDS

DEVELOPED CONDITIONS

* 1-LOT INDUSTRIAL PARK WITH 2 BUILDINGS

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

| | |
|------------------------|----------------|
| * MASS GRADING | (XXXX TO XXXX) |
| * UTILITY INSTALLATION | (XXX/ TO XXX/) |
| * SITE CONSTRUCTION | (XXX/ TO XXX/) |
| * FINAL STABILIZATION | (XXX/ TO XXX/) |

TOTAL SITE AREA = 217,682 SF (5.00 AC)

TOTAL DISTURBED AREA = 217,682 SF (5.00 AC)

SITE SOIL CLASSIFICATION: (FROM USGS)

27 - LABISH MUCKY CLAY
43 - WAPATO SILTY CLAY LOAM
37C - VERBOORT SILTY CLAY LOAM, 0 TO 3 PERCENT SLOPES

RECEIVING WATER BODIES:

NEAREST WATER BODY: HEDGES CREEK

PERMITTEE'S SITE INSPECTOR:

| |
|-----------------------------------|
| COMPANY/AGENCY: TBD |
| PHONE: (XXX) XXX-XXXX |
| E-MAIL: |
| EXPERIENCE: CESSL CERTIFICATION # |

INSPECTION FREQUENCY TABLE

| SITE CONDITION | MINIMUM FREQUENCY |
|--|---|
| 1. ACTIVE PERIOD | DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING. |
| 2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY. | AT LEAST ONCE EVERY FOURTEEN (14) DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING. |
| 3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS. | 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. |
| 4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER. | ONCE EVERY MONTH. |
| 5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS. | IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION. MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY. |

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (Schedule A.8.c.i.(3))
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS.
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS.
- RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION. (Schedule B.2.a)

LOCAL AGENCY-SPECIFIC EROSION CONTROL NOTE:

- IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAT SEPTEMBER 1; THE TYPE AND PERCENTAGES OF SEED IN THE MIX MUST BE IDENTIFIED ON THE PLANS
- ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP I.E. (FILTER BAG)
- ALL EXPOSED SOILS MUST BE COVERED DURING THE WET WEATHER PERIOD, OCTOBER 01 - MAY 31.

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

| BMP | YEAR: 2020 | | | | | | | | | | |
|--|------------|---|---|---|---|---|---|----|----|---|---|
| | MONTH #: | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | |
| BIOBAGS | | | | | | | | | | | |
| BIOSWALES | | | | | | | | | | | |
| CHECK DAMS | | | | | | | | | | | |
| COMPOST BERM | | | | | | | | | | | |
| COMPOST BLANKETS | | | | | | | | | | | |
| COMPOST SOCKS | | | | | | | | | | | |
| CONCRETE TRUCK WASHOUT | | | X | X | X | X | X | X | X | X | X |
| CONSTRUCTION ENTRANCE | | | X | X | X | X | X | X | X | X | X |
| DEWATERING (TREATMENT LOCATION, SCHEMATIC, & SAMPLING PLAN REQUIRED) | | | | | | | | | | | |
| DRAINAGE SWALES | | | | | | | | | | | |
| EARTH DIKES (STABILIZED) | | | | | | | | | | | |
| ENERGY DISSIPATORS | | | | | | | | | | | |
| EROSION CONTROL BLANKETS & MATS (SPECIFY TYPE) | | | | | | | | | | | |
| HYDROSEEDING | | | | | | | | | | | |
| INLET PROTECTION | | | | | | | | | | | |
| MULCHES (SPECIFY TYPE) | | | | | | | | | | | |
| MYCORRHIZAE/ BIOFERTILIZERS | | | | | | | | | | | |
| NATURAL BUFFER ZONE | | | | | | | | | | | |
| ORANGE FENCING (PROTECTING SENSITIVE/PRESERVED AREAS) | | | | | | | | | | | |
| OUTLET PROTECTION | | | | | | | | | | | |
| PERMANENT SEEDING AND PLANTING | | | | | | | | | | | |
| PIPE SLOPE DRAINS | | | | | | | | | | | |
| PLASTIC SHEETING | | | | | | | | | | | |
| PRESERVE EXISTING VEGETATION | | | | | | | | | | | |
| SEDIMENT FENCING | | | X | X | X | X | X | X | X | X | X |
| SEDIMENT BARRIER | | | | | | | | | | | |
| SEDIMENT TRAP | | | | | | | | | | | |
| SODDING | | | | | | | | | | | |
| SOIL TACKIFIERS | | | | | | | | | | | |
| STORM DRAIN INLET PROTECTION | | | X | X | X | X | X | X | X | X | X |
| STRAW WATTLES | | | | | | | | | | | |
| TEMPORARY DIVERSION DIKES | | | | | | | | | | | |
| TEMPORARY OR PERMANENT SEDIMENTATION BASINS | | | | | | | | | | | |
| TEMPORARY SEEDING AND PLANTING | | | | | | | | | | | |
| TREATMENT SYSTEM (O & M PLAN REQUIRED) | | | | | | | | | | | |
| UNPAVED ROADS GRAVELED OR OTHER BMP ON THE ROAD | | | | | | | | | | | |
| VEGETATIVE BUFFER STRIPS | | | | | | | | | | | |

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S 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 PLAN, AN ACTION PLAN WILL BE SUBMITTED.

EROSION AND SEDIMENT CONTROL PLANS SHEET INDEX
C1.40 - EROSION AND SEDIMENT CONTROL PLAN COVER SHEET
C1.41 - CLEARING, DEMOLITION, MASS GRADING, ESC PLAN
C1.42 - UTILITY AND STREET CONST., GRADING AND STABILIZATION ESC PLAN
C1.43 - EROSION AND SEDIMENT CONTROL DETAILS



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SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN COVER SHEET

DRAWN BY: GIM
CHECKED BY: MWB
SHEET

C1.40

JOB NO. **2190365.00**



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SHEET TITLE:
**CLEARING,
DEMOLITION,
MASS GRADING,
ESC PLAN**

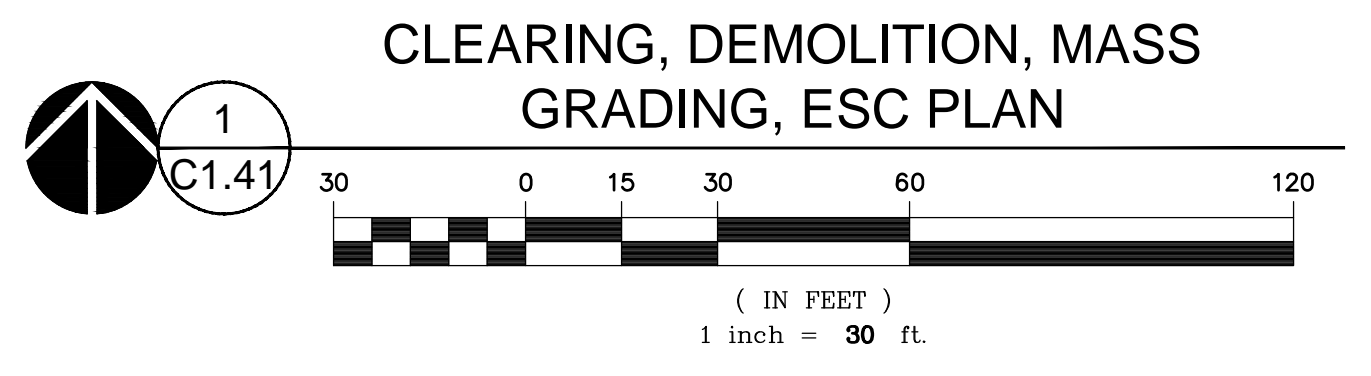
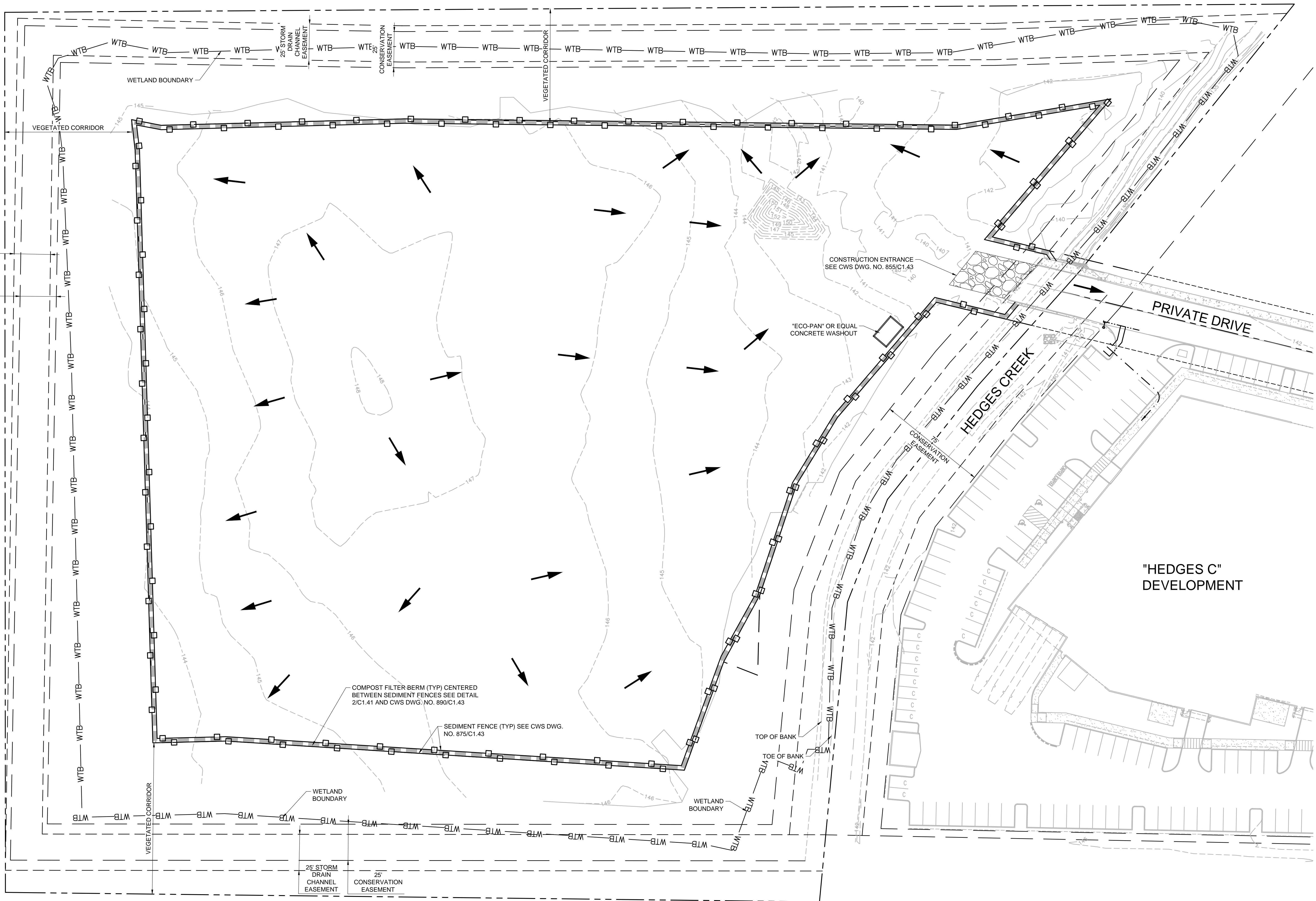
DRAWN BY: GIM

CHECKED BY: MWB

SHEET

C1.41

JOB NO. **2190365.00**



LEGEND

- EXISTING DRAINAGE FLOW DIRECTION
- COMPOST FILTER BERM
- SEDIMENT FENCE/STRAW WATTLE
- INLET PROTECTION
- GRAVEL CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT

STAGING AND STOCKPILE AREAS ARE TO BE DETERMINED BY THE CONTRACTOR AND ADJUSTED TO ACCOMMODATE THE PROGRESS OF CONSTRUCTION. THE OWNER'S EROSION CONTROL INSPECTOR SHALL BE MADE AWARE OF ALL CHANGES AND CONSULTED FOR BMP IMPLEMENTATIONS THAT MAY BE NECESSARY TO ACCOMMODATE THE SELECTED LOCATIONS.

THIS PLAN IS INTENDED TO BE ONLY A BASELINE APPROACH TO EROSION AND SEDIMENT CONTROL FOR THE PROJECT SITE. THE OWNER'S EROSION AND SEDIMENT CONTROL INSPECTOR SHALL BE RESPONSIBLE FOR INSTRUCTING THE CONTRACTOR TO ADJUST BMP'S AS NECESSARY TO PROPERLY MANAGE THE VARIOUS PHASES OF CONSTRUCTION AND ANY UNFORESEEN CONDITIONS REQUIRING DIFFERENT OR ADDITIONAL BMP'S TO MANAGE.

SEE SHEETS C1.43 FOR EROSION AND SEDIMENT CONTROL DETAILS



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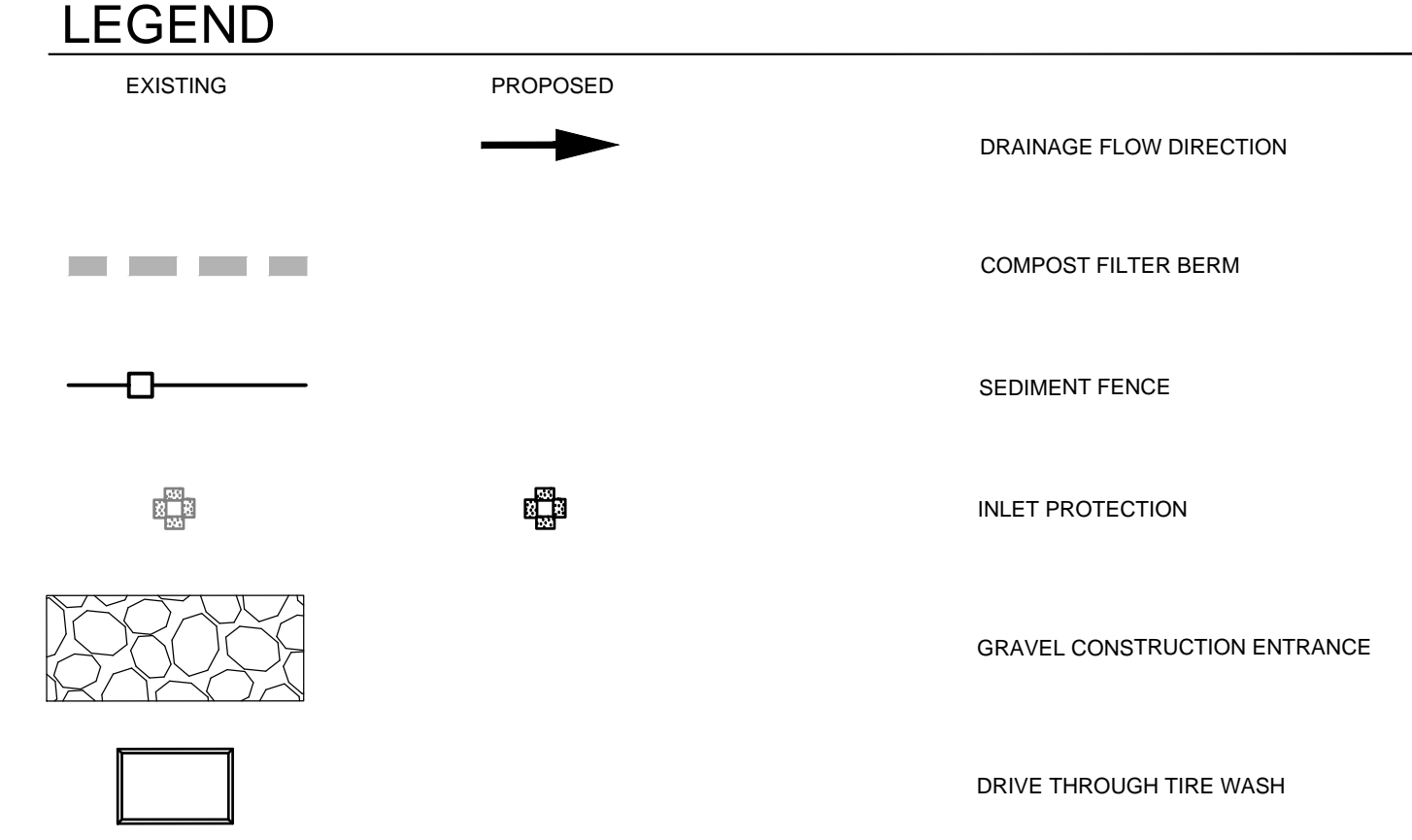
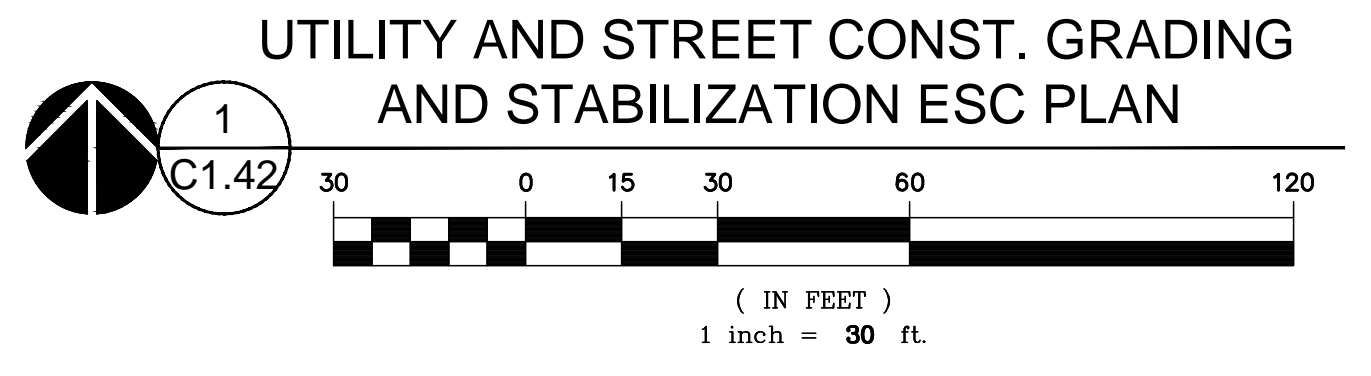
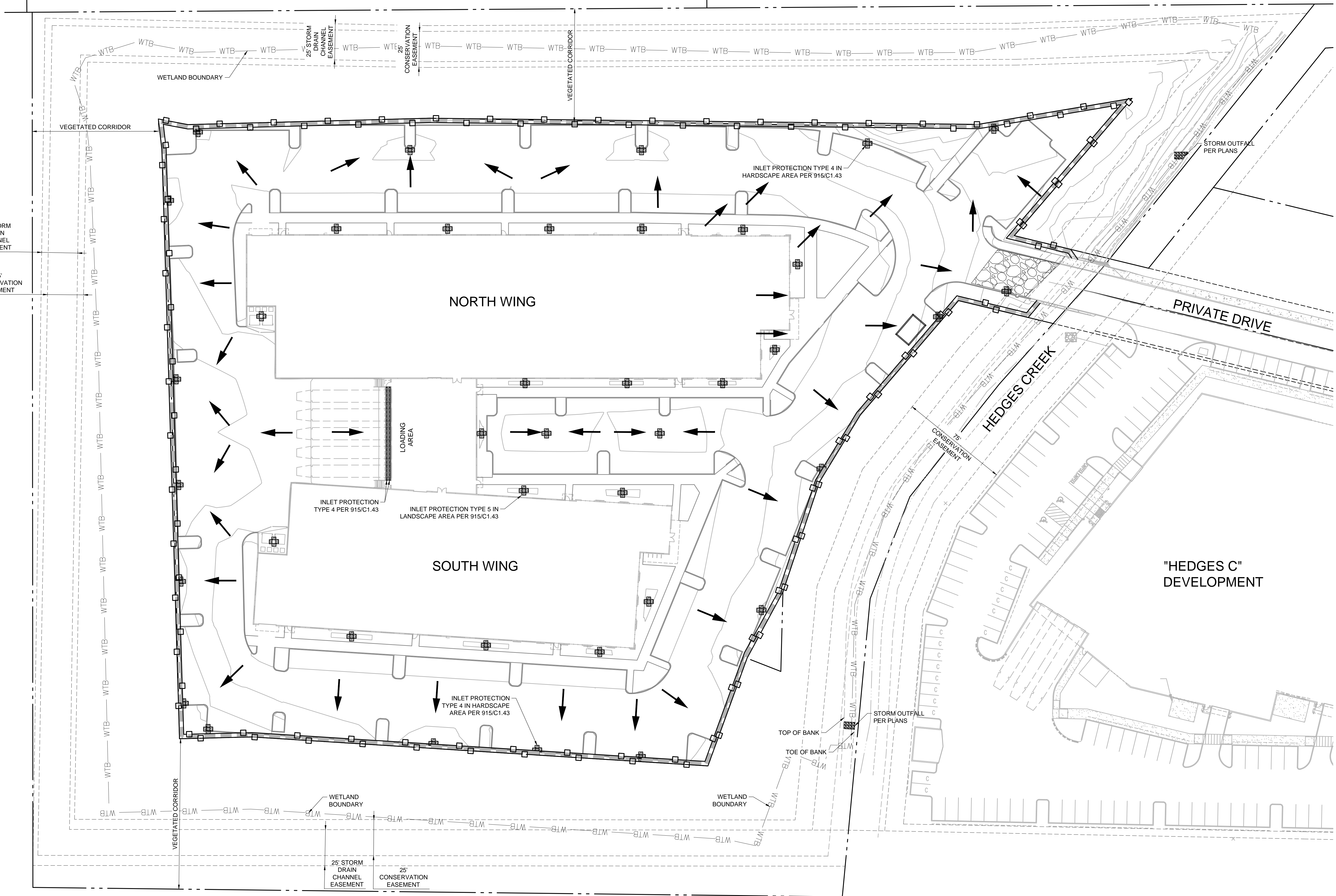
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SHEET TITLE:
UTILITY AND STREET CONST. GRADING AND STABILIZATION ESC PLAN

DRAWN BY: GIM
CHECKED BY: MWB
SHEET

C1.42

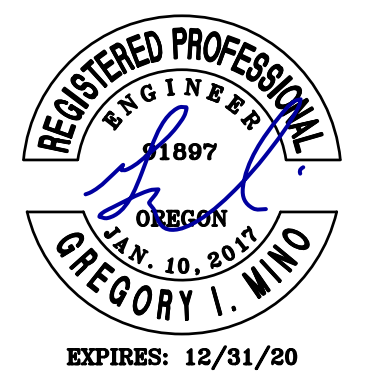
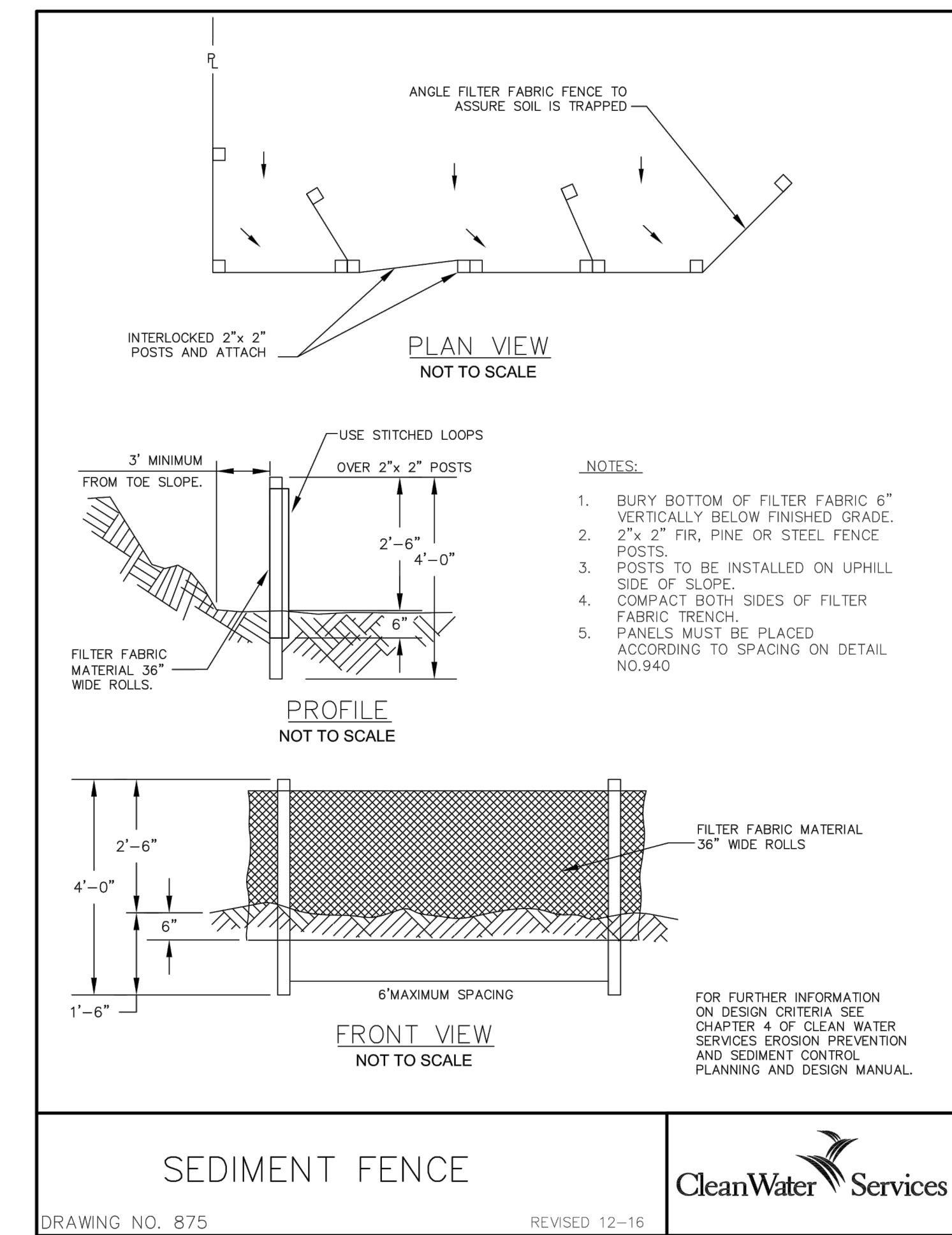
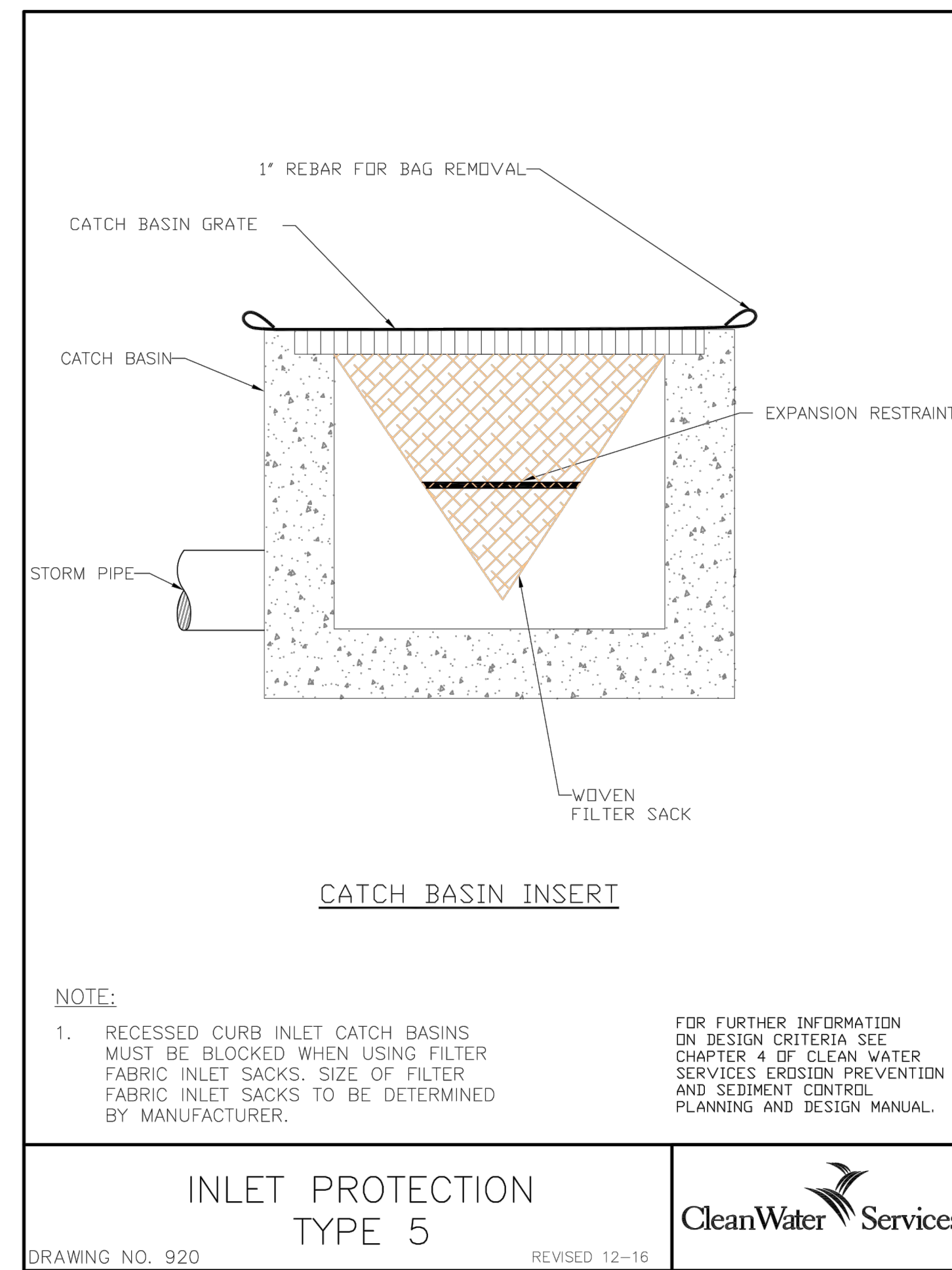
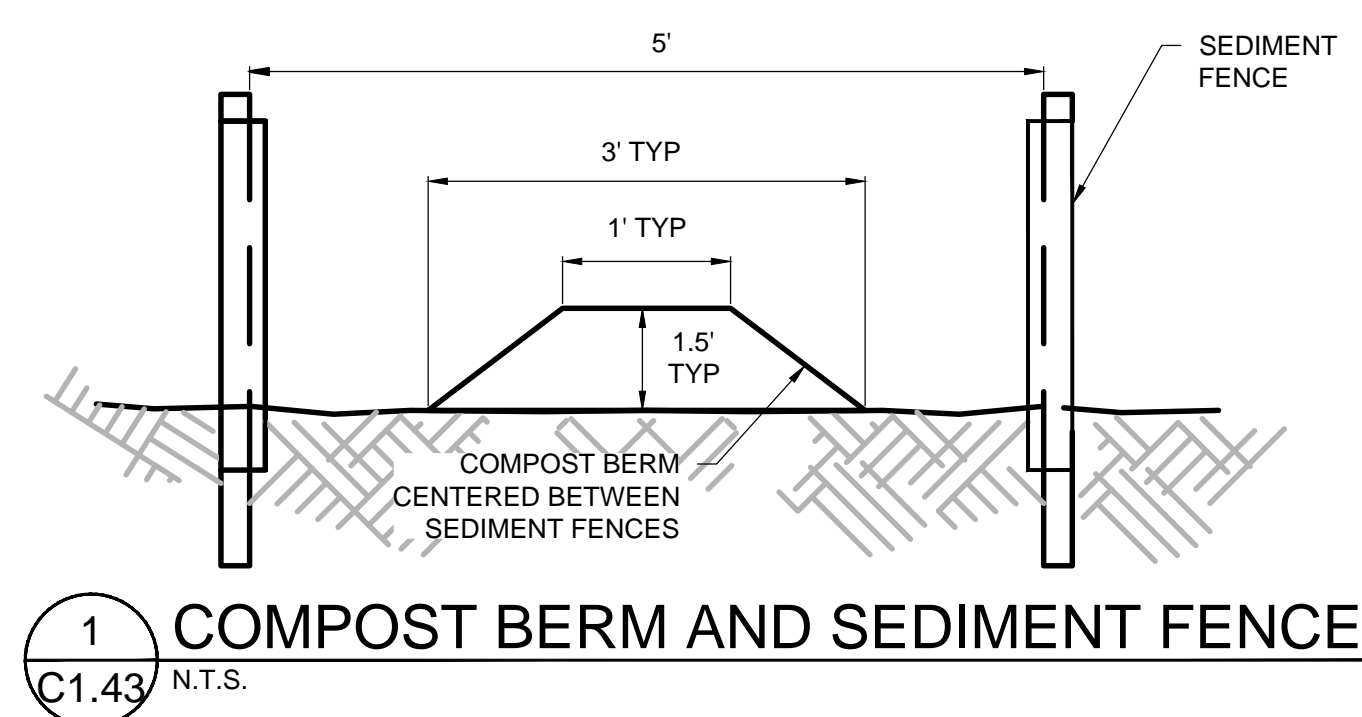
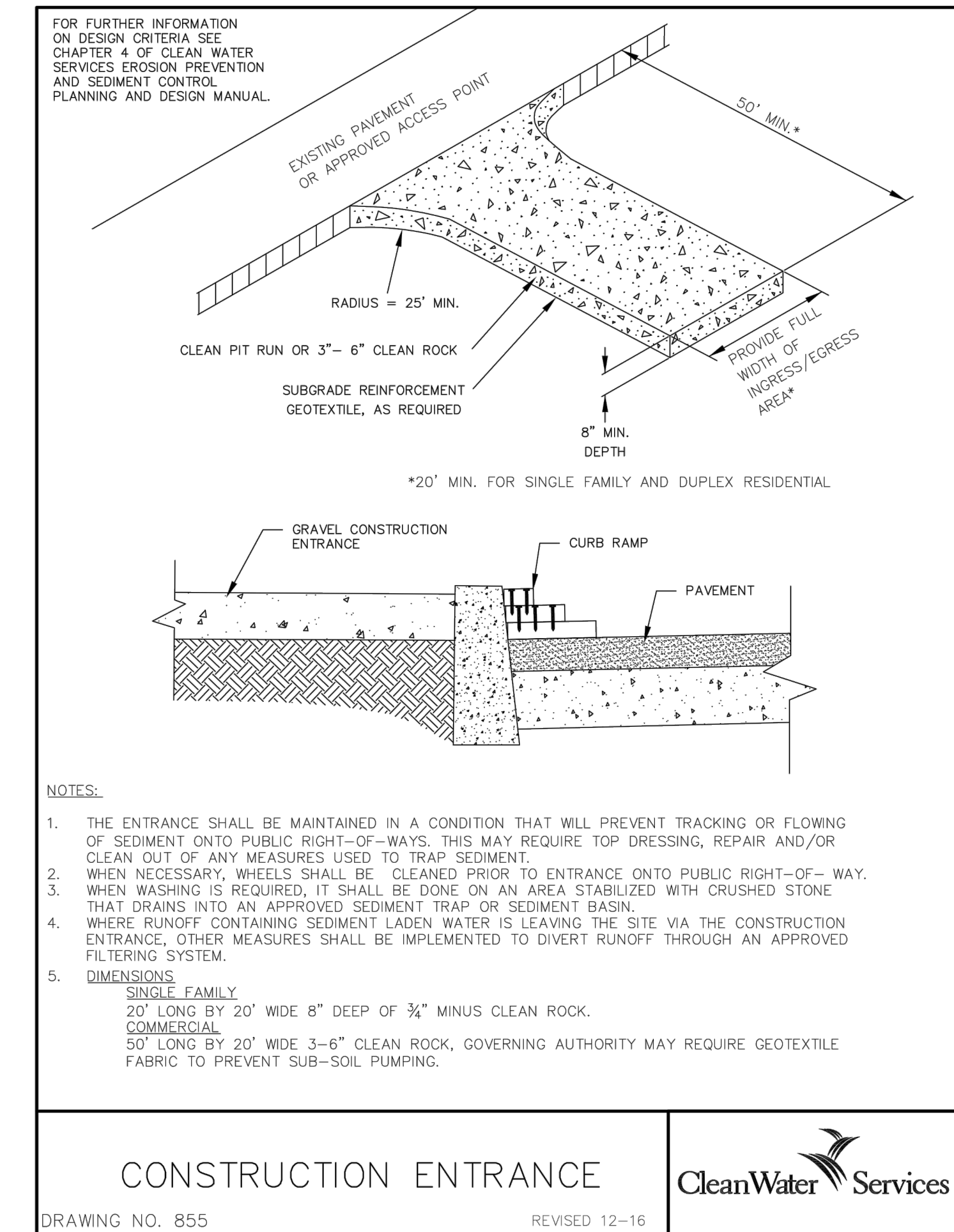
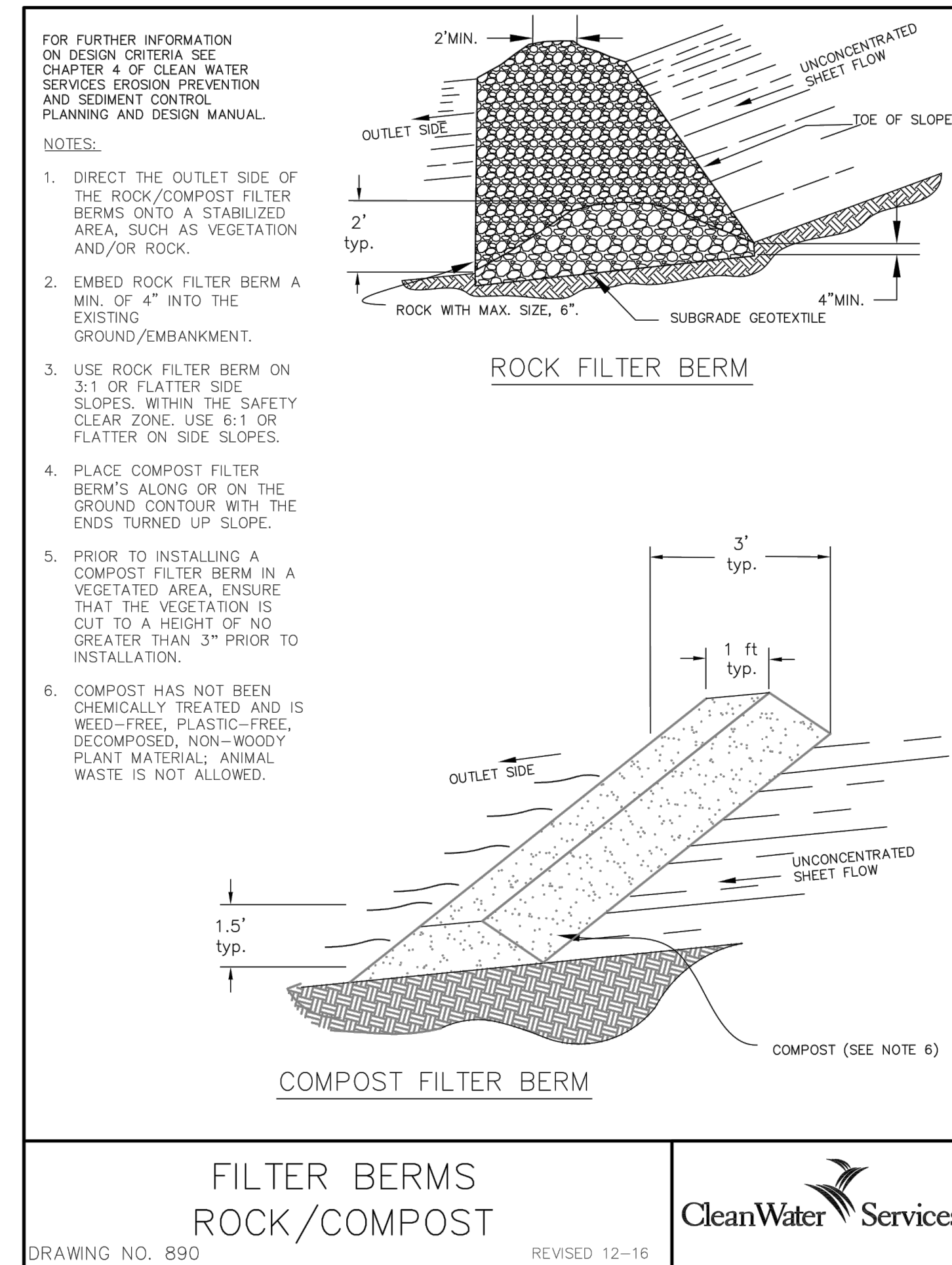
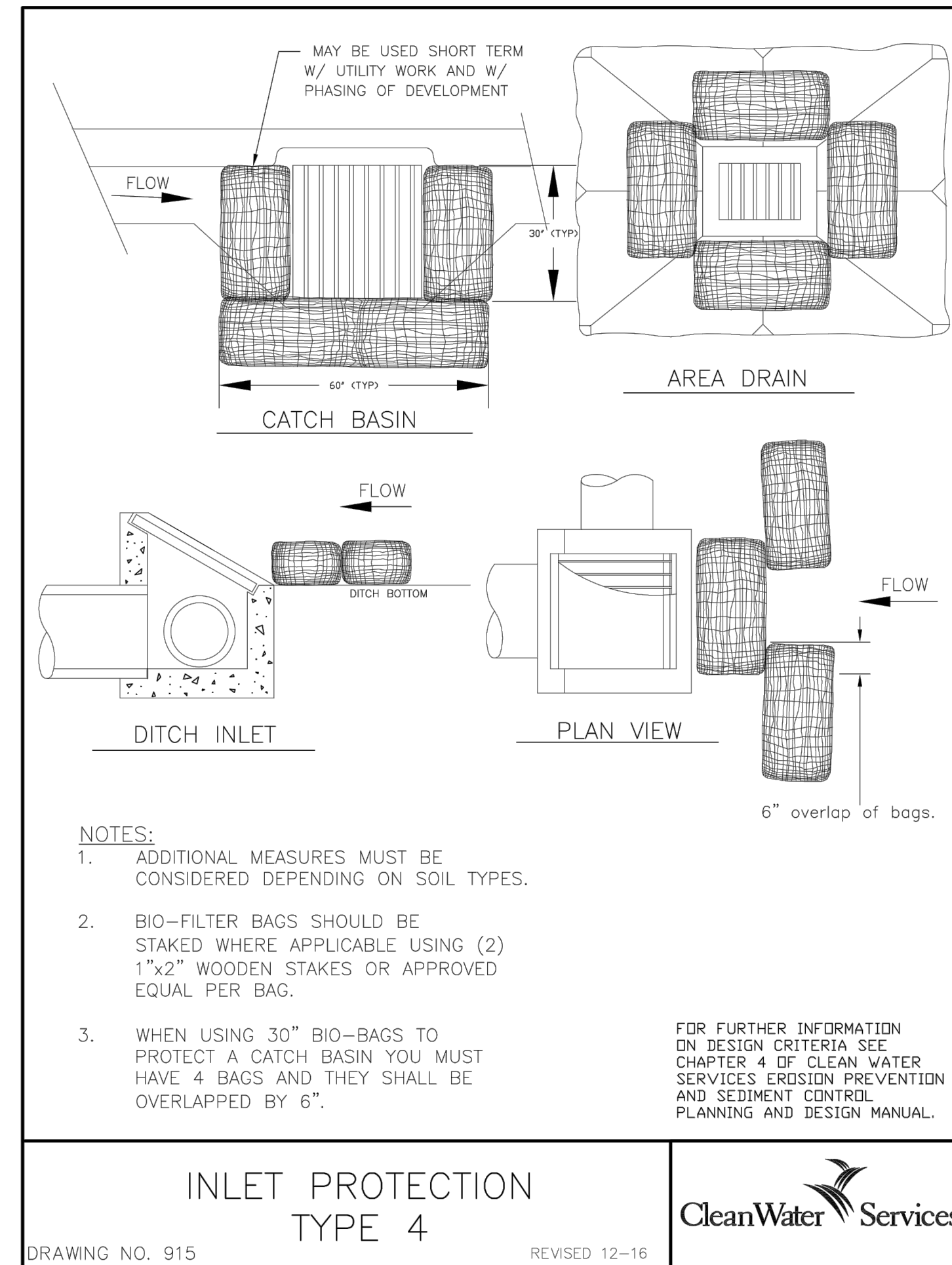
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SEE SHEETS C1.43 FOR EROSION AND SEDIMENT CONTROL DETAILS



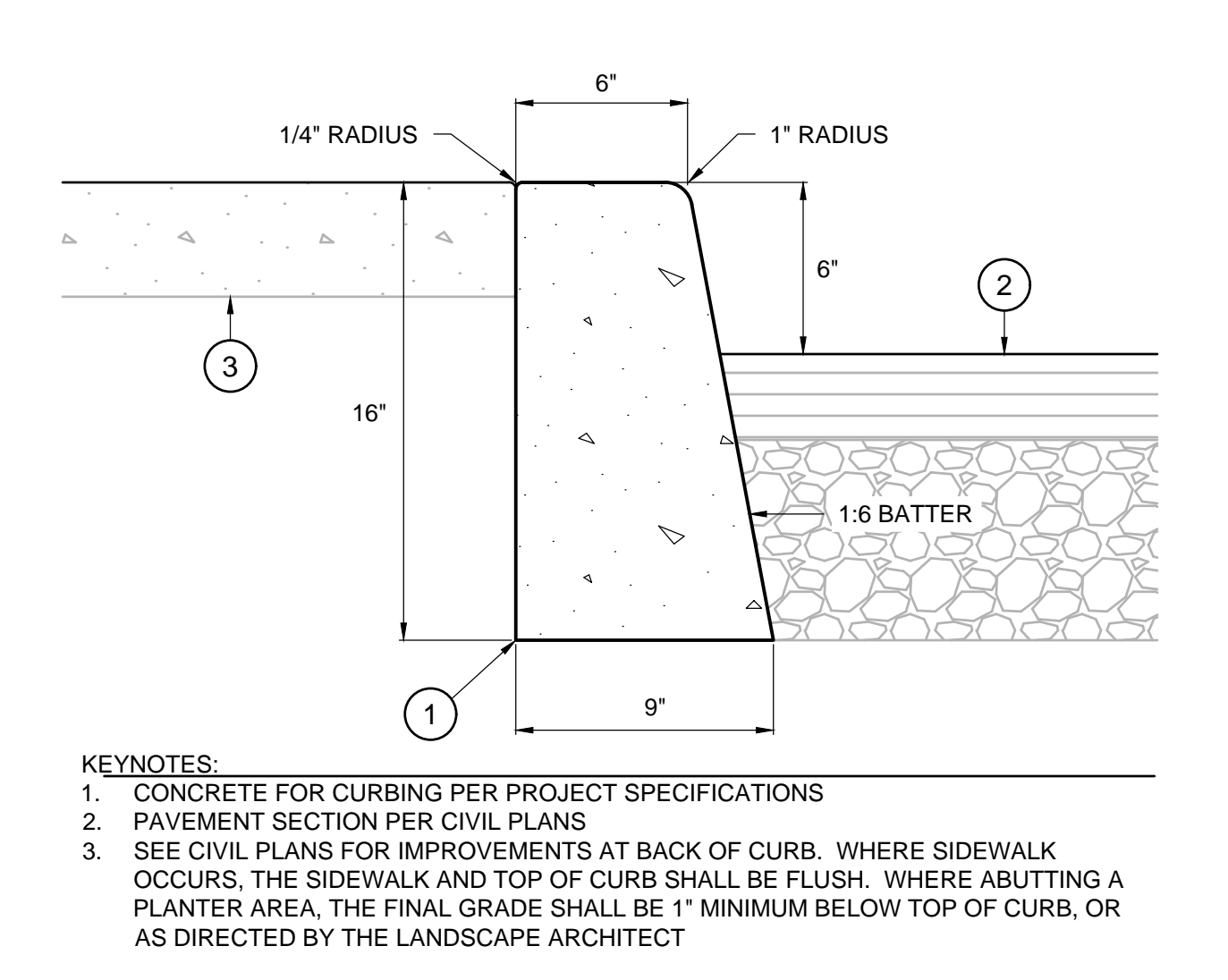
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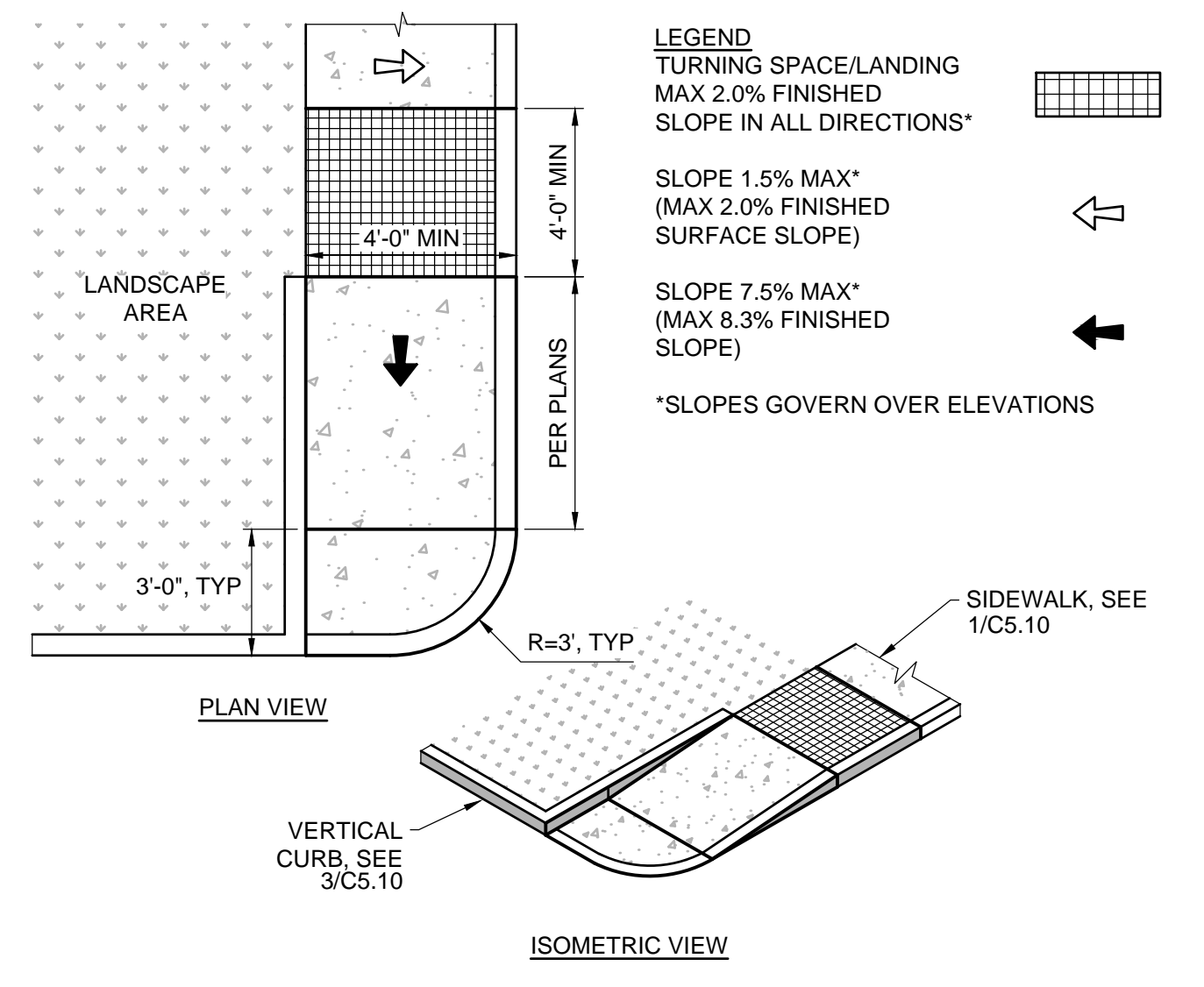
SHEET TITLE:
**EROSION AND
SEDIMENT
CONTROL
DETAILS**

DRAWN BY: GIM
CHECKED BY: MWB
SHEET

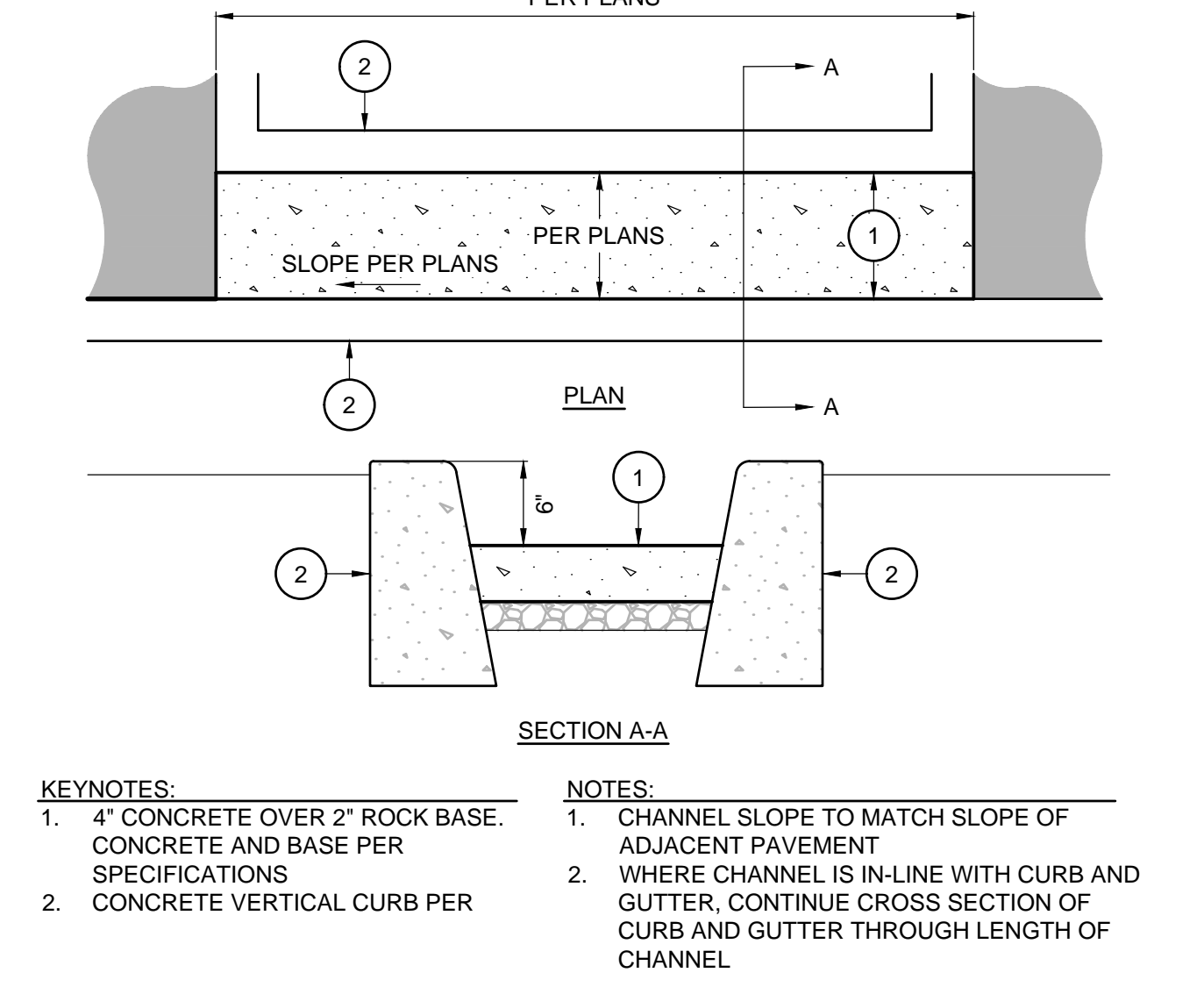
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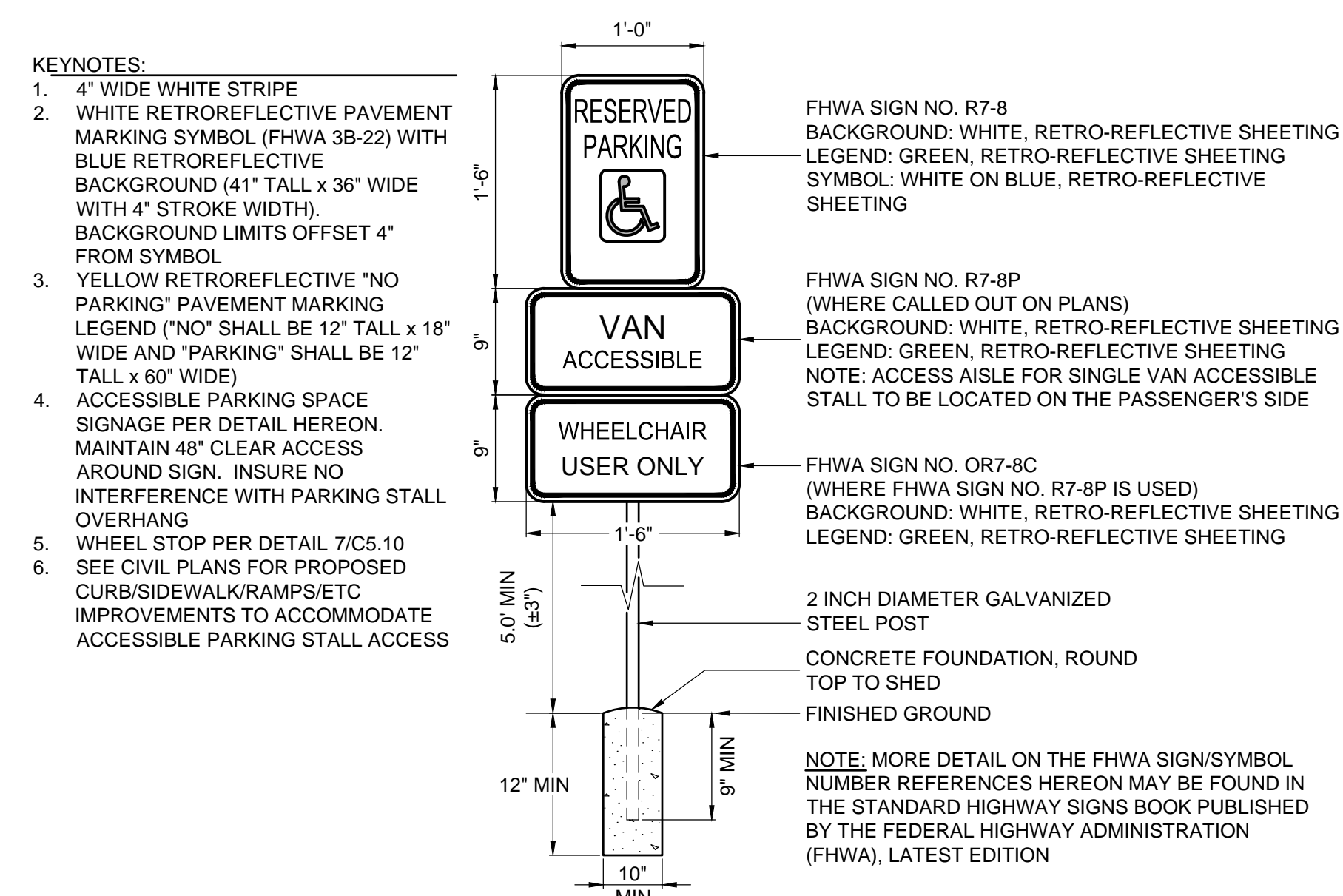
3 VERTICAL CURB
 C5.10 N.T.S.



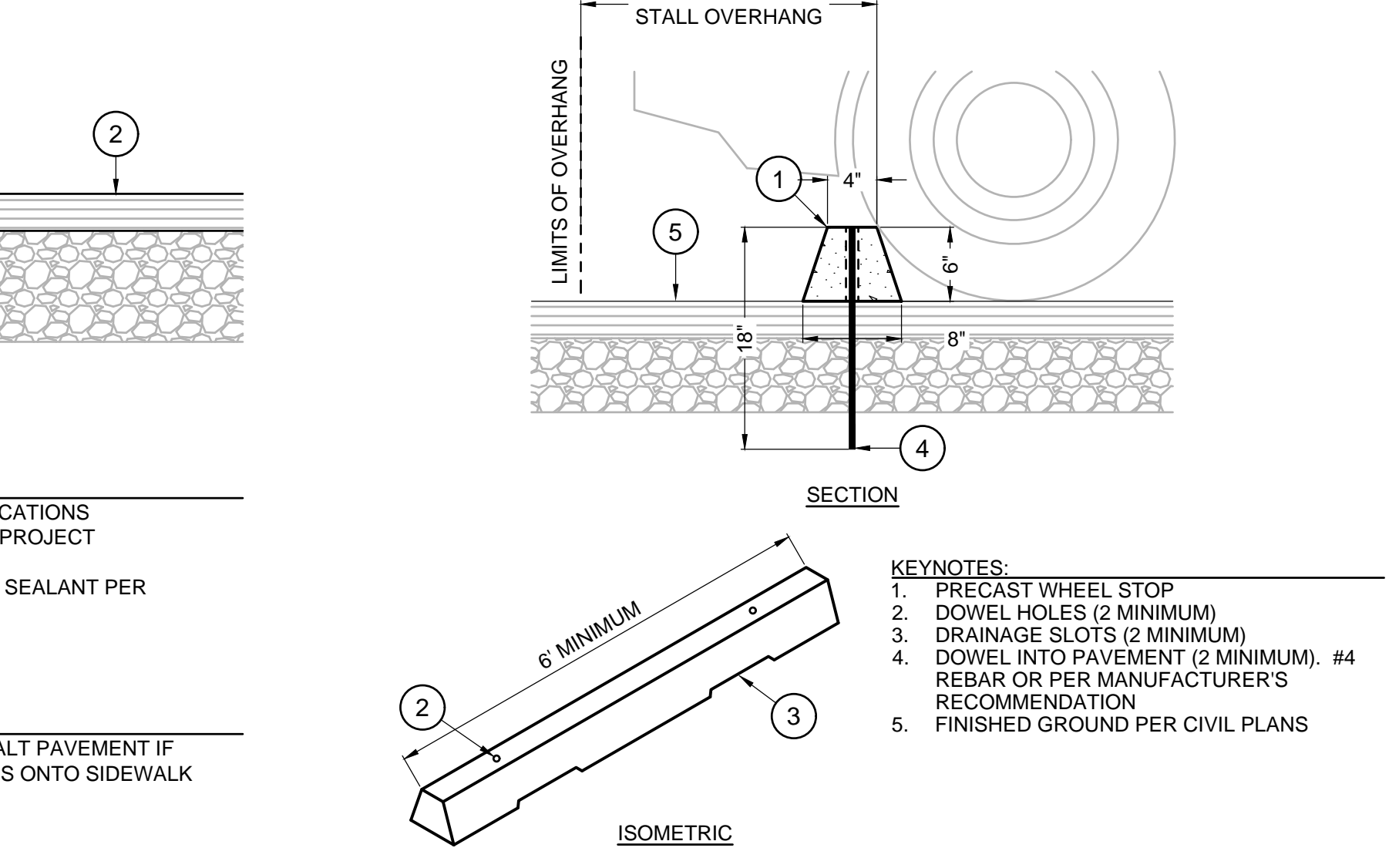
8 CORNER CURB RAMP
 C5.10 N.T.S.



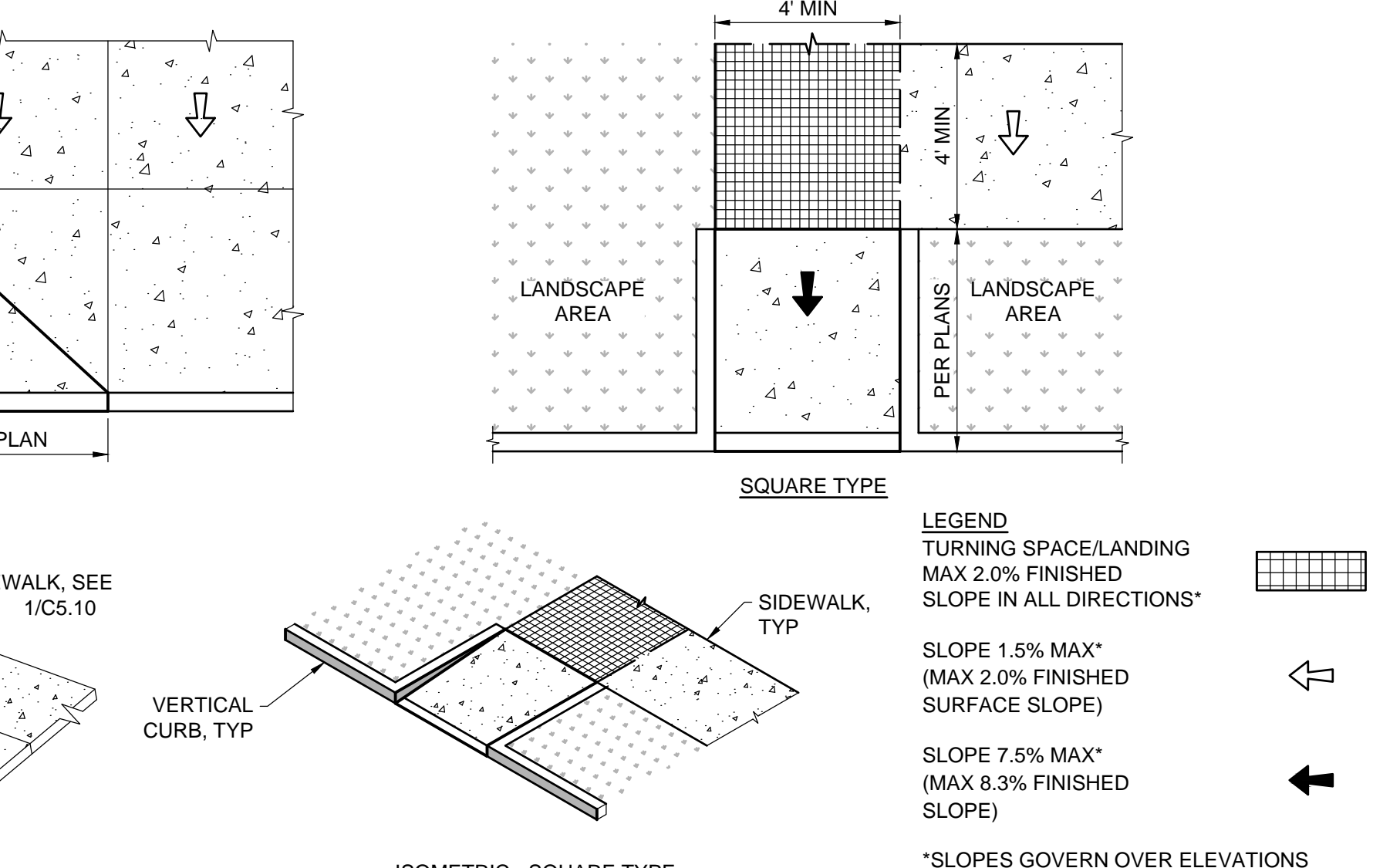
11 CONCRETE CURB CHANNEL
 C5.10 N.T.S.



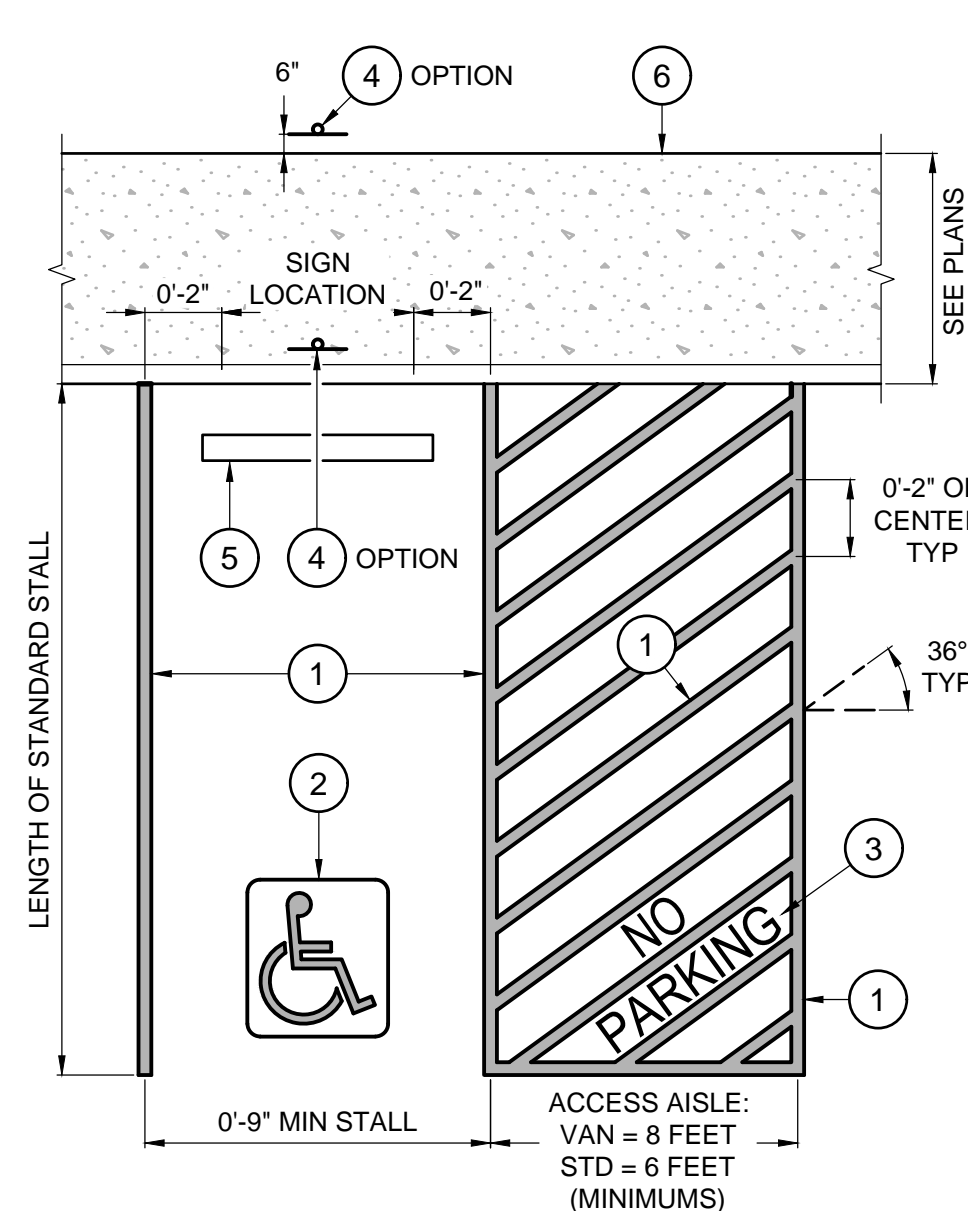
2 ACCESSIBLE PARKING STALL
 C5.10 N.T.S.



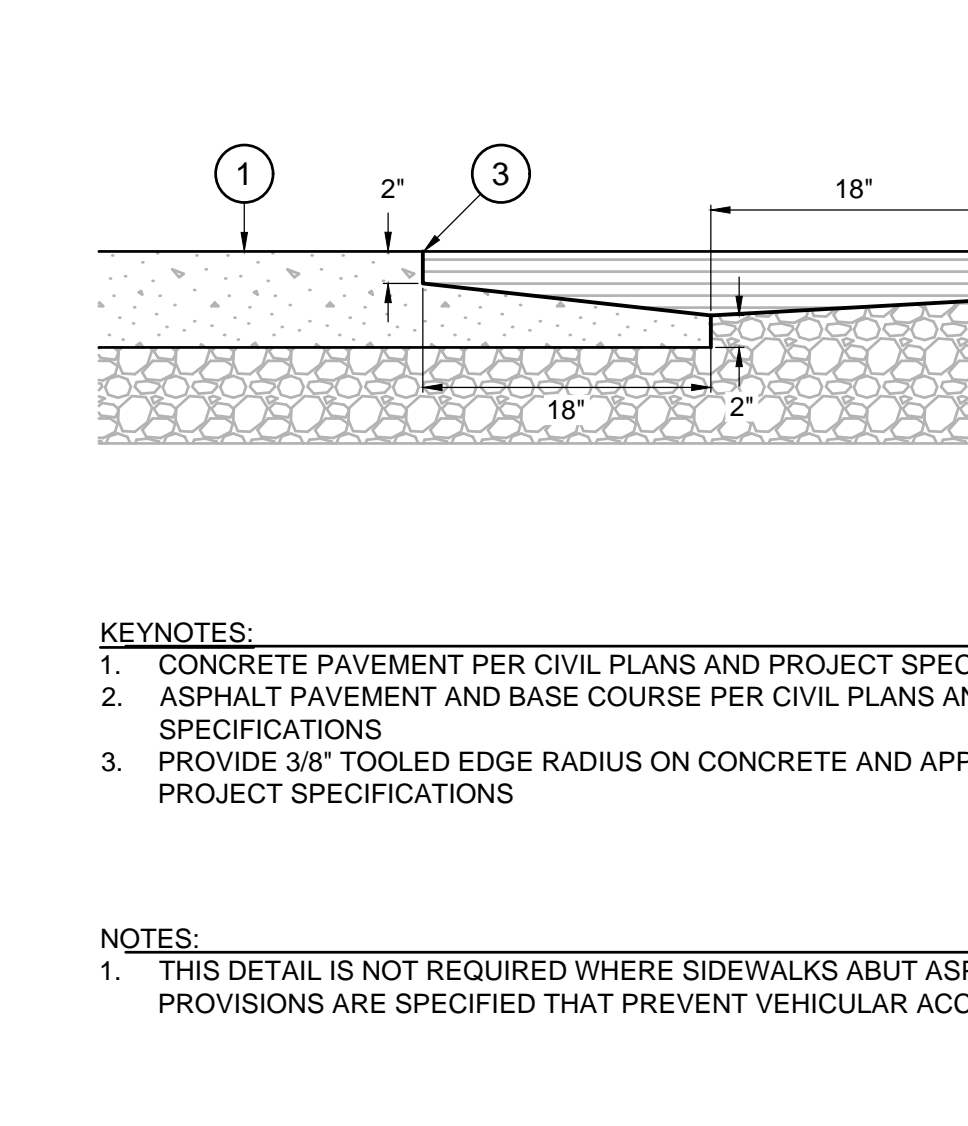
7 PRECAST WHEEL STOP
 C5.10 N.T.S.



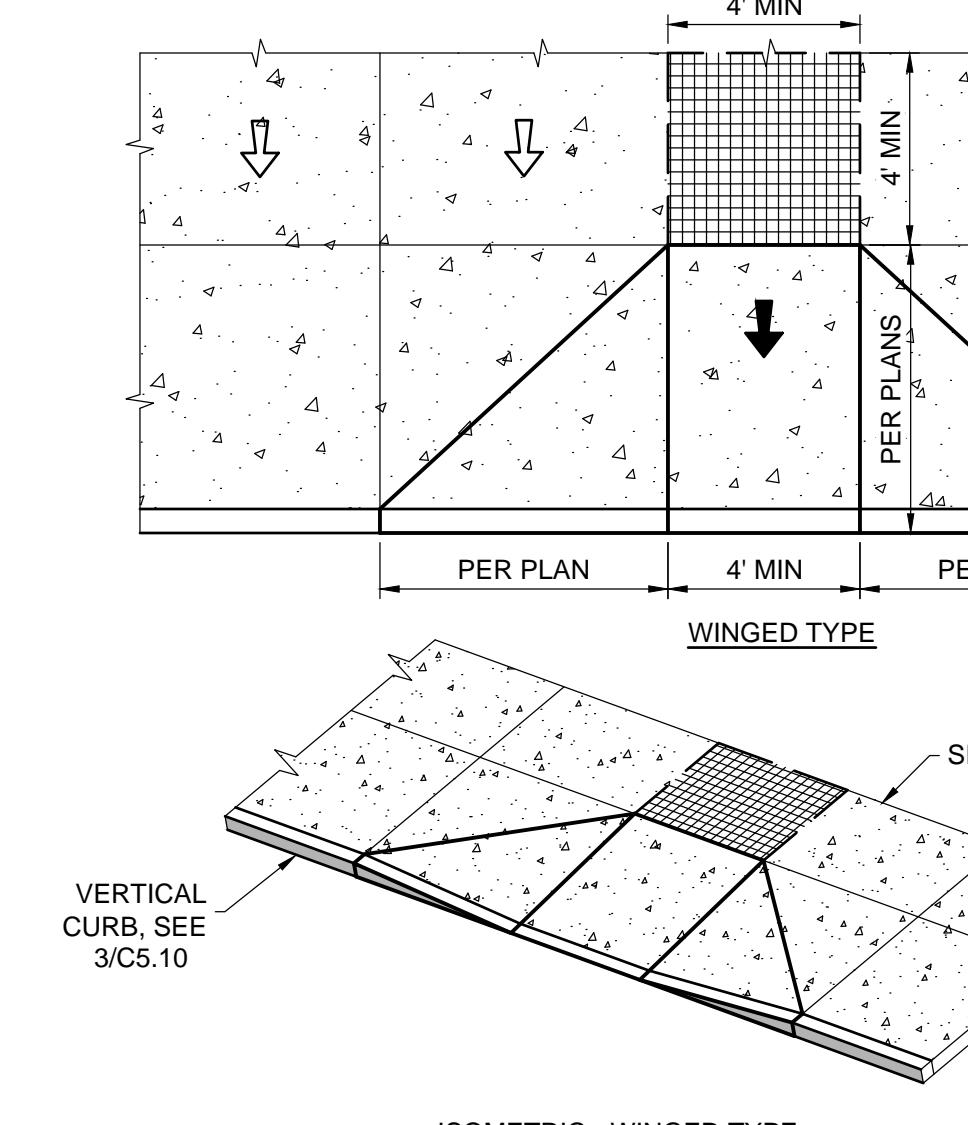
10 PERPENDICULAR CURB RAMPS
 C5.10 N.T.S.



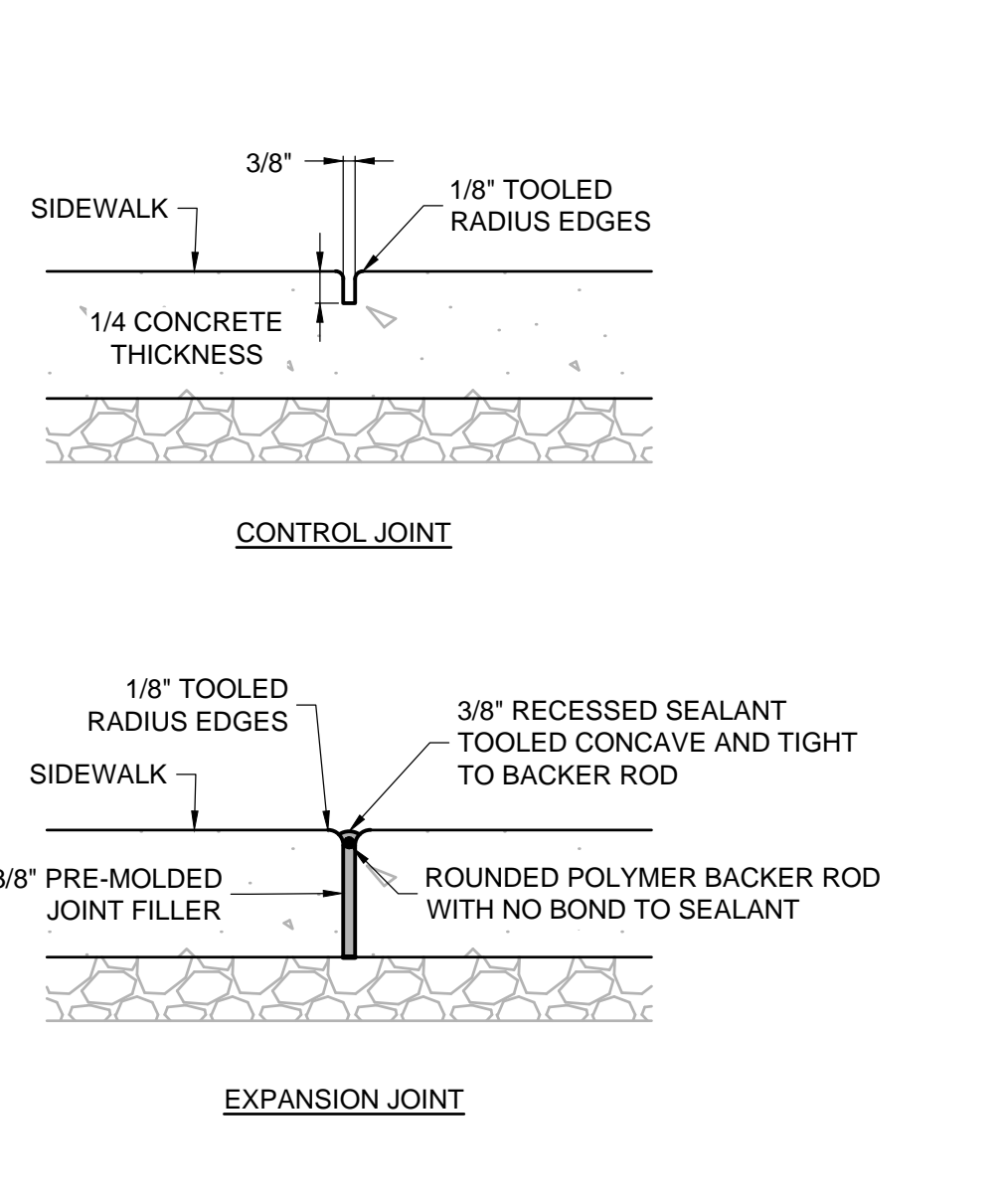
6 ASPHALT TO CONCRETE TRANSITION
 C5.10 N.T.S.



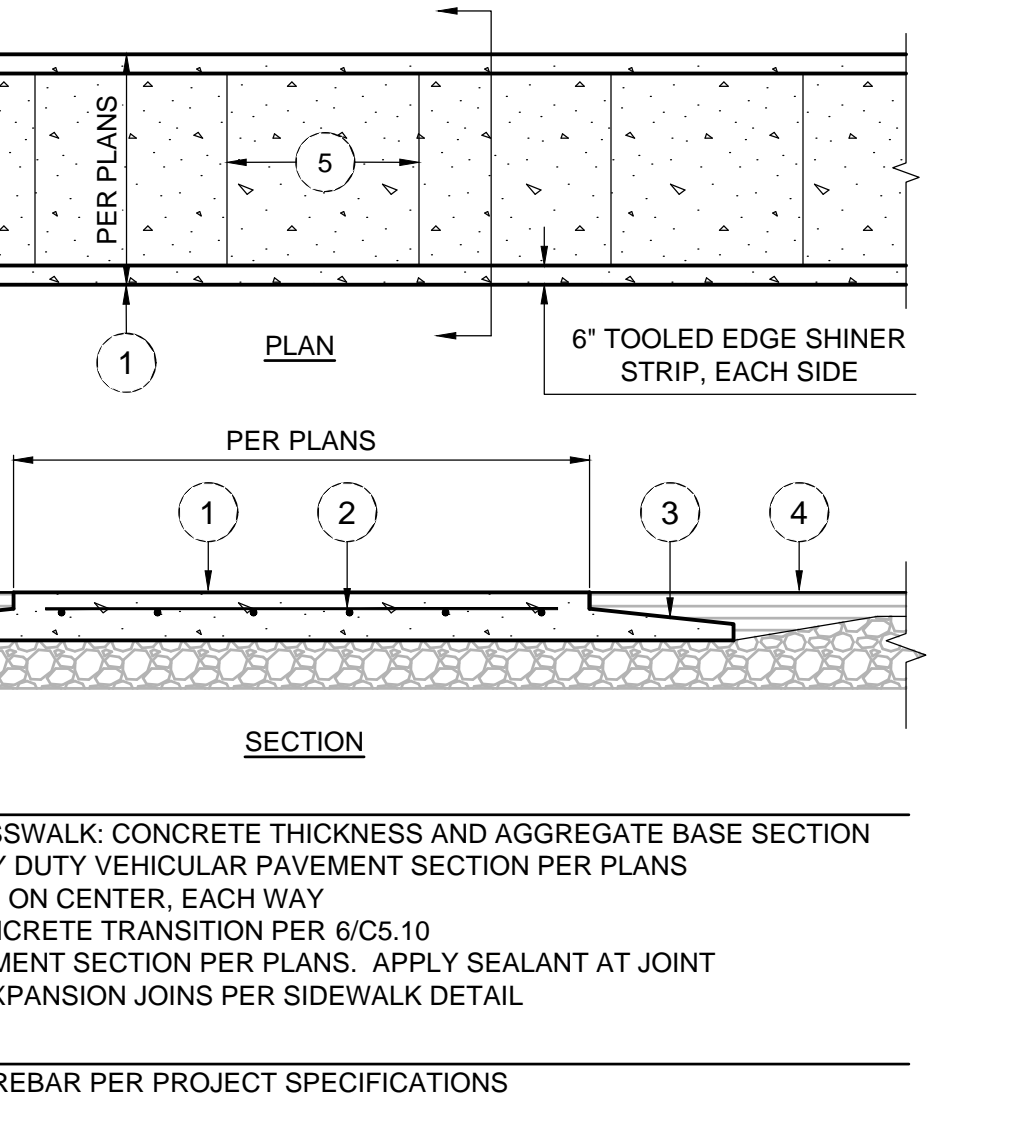
5 CONCRETE CROSSWALK
 C5.10 N.T.S.



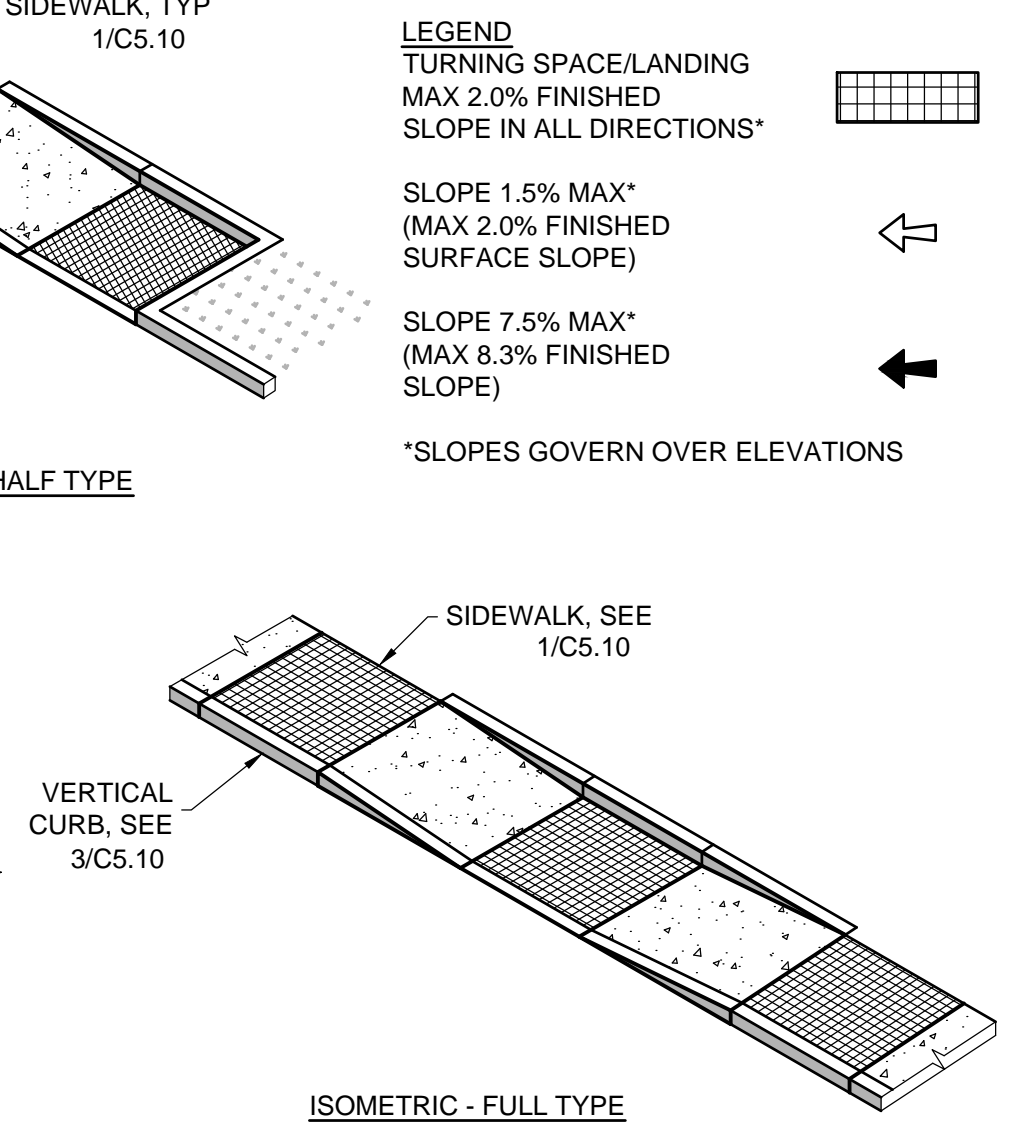
4 PARKING STALL STRIPING
 C5.10 N.T.S.



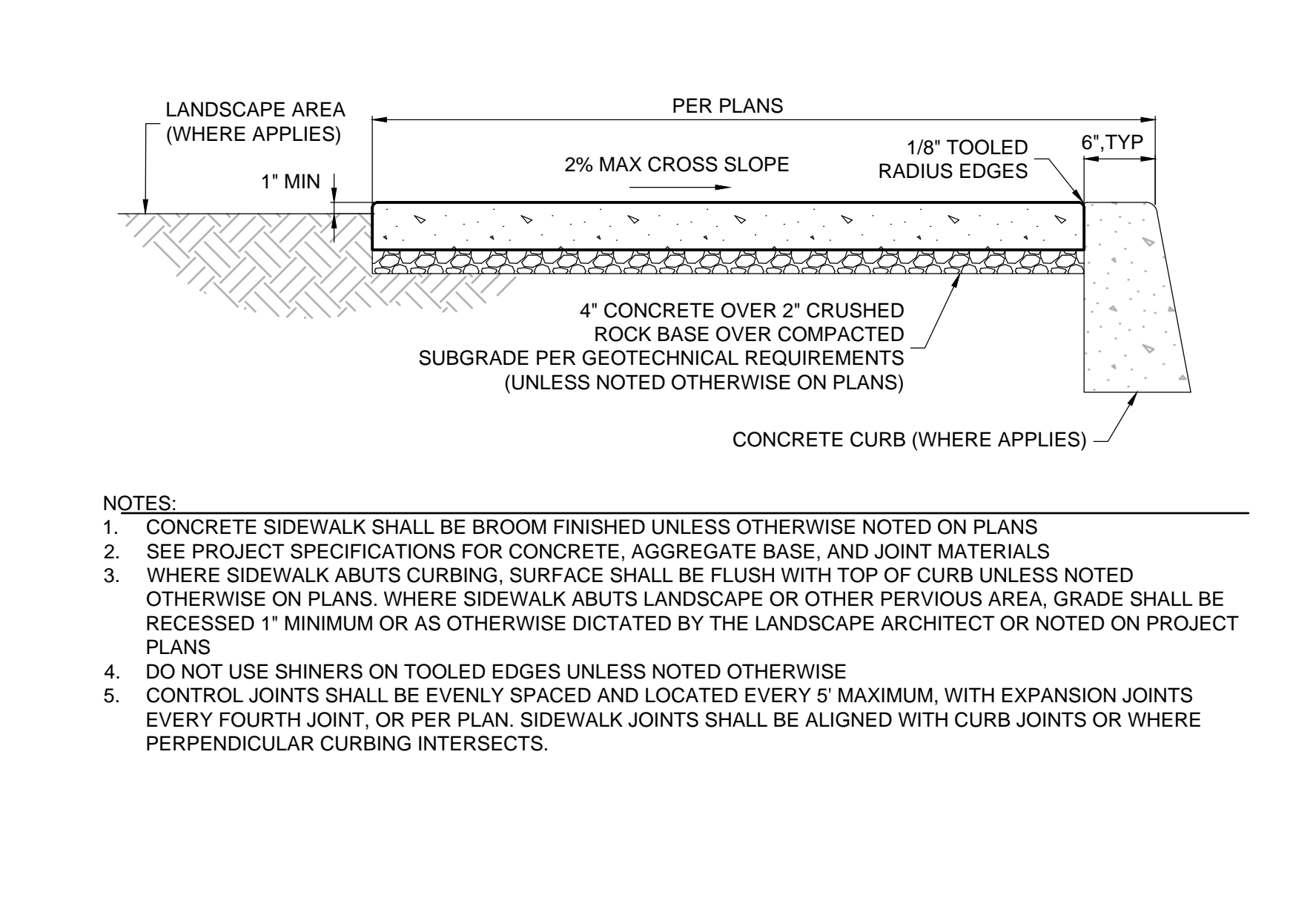
1 CONCRETE SIDEWALK AND JOINTS
 C5.10 N.T.S.



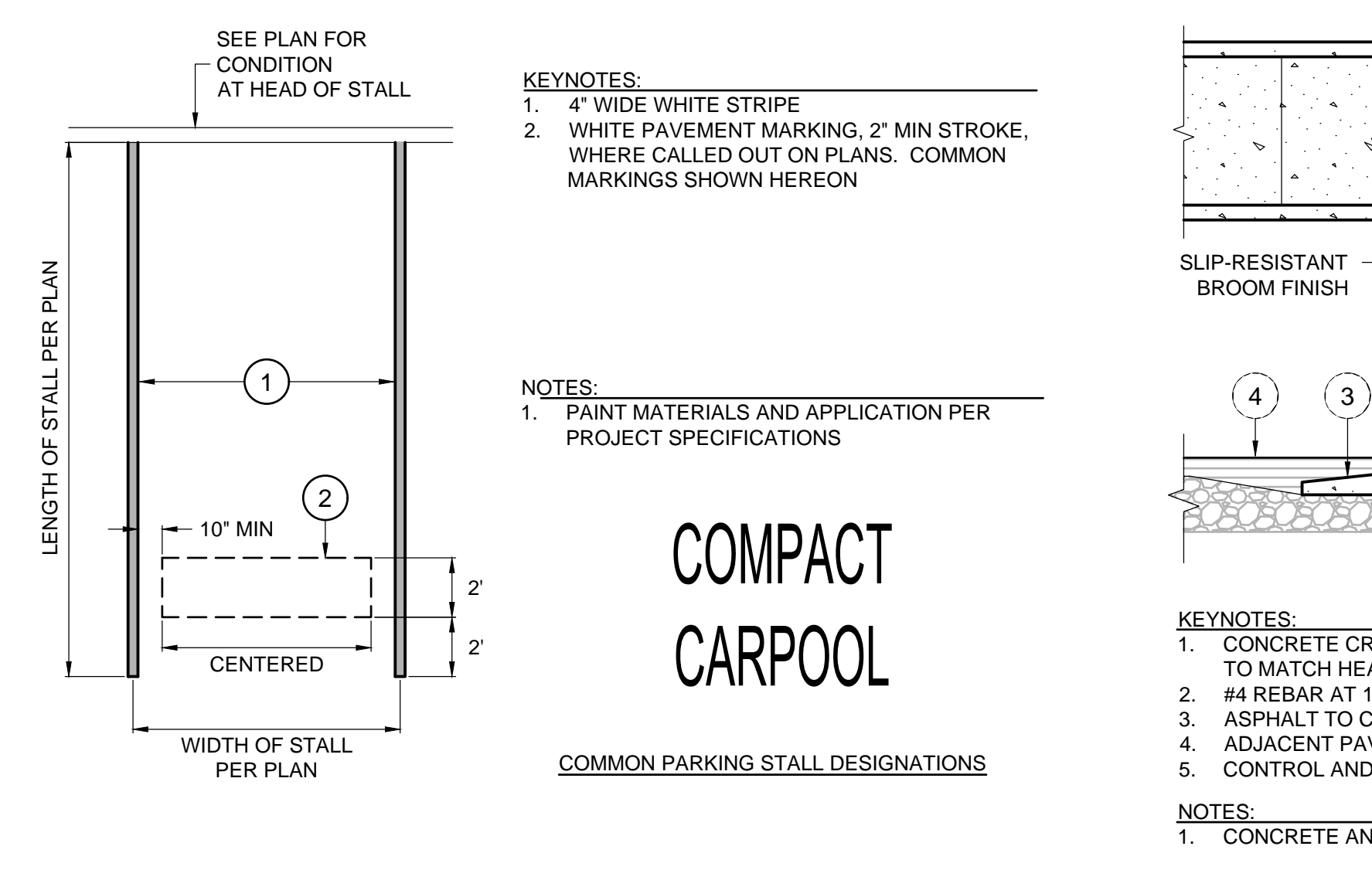
9 PARALLEL CURB RAMPS
 C5.10 N.T.S.



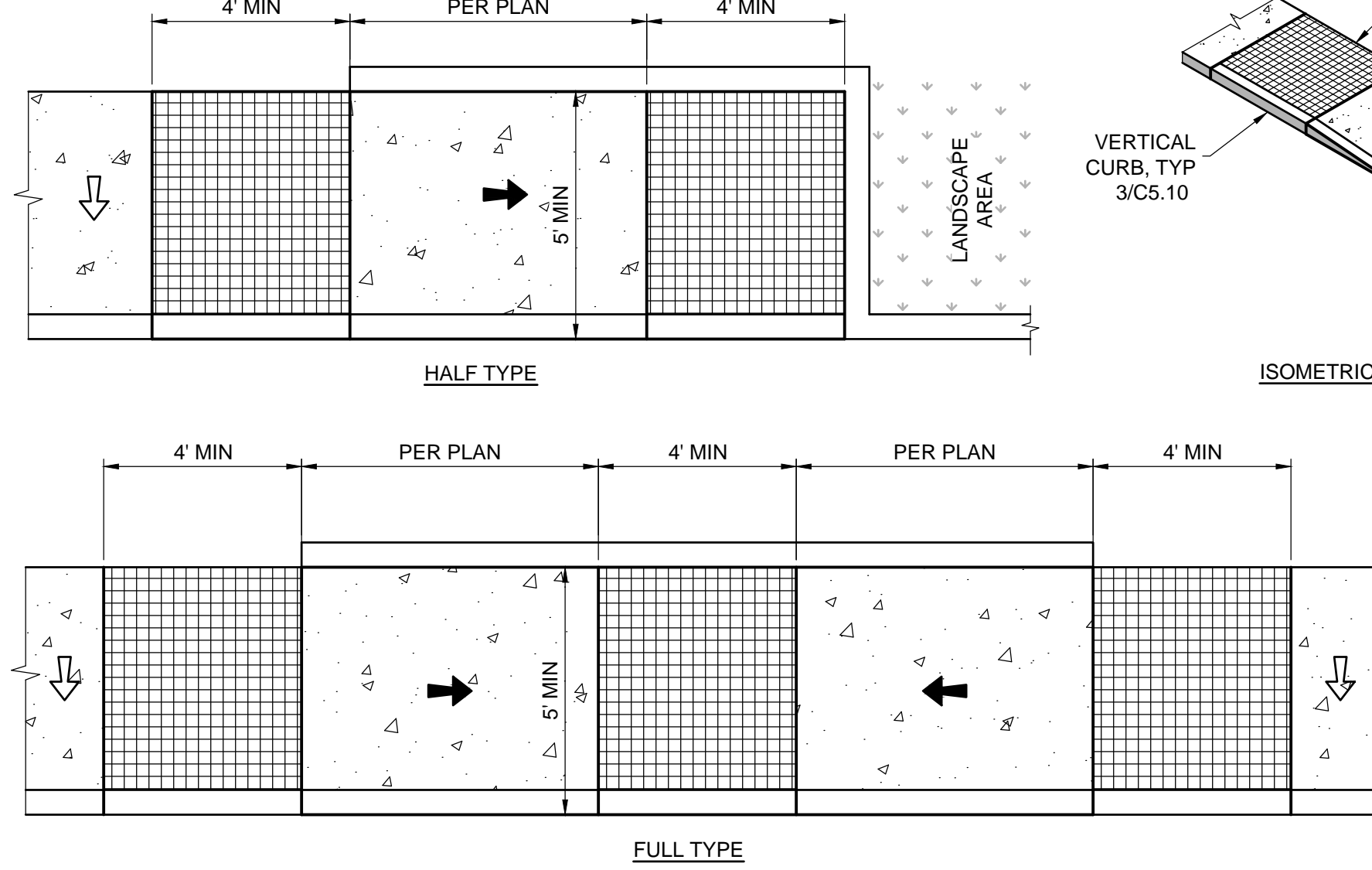
12 SCHEMATIC WALL
 C5.10 N.T.S.



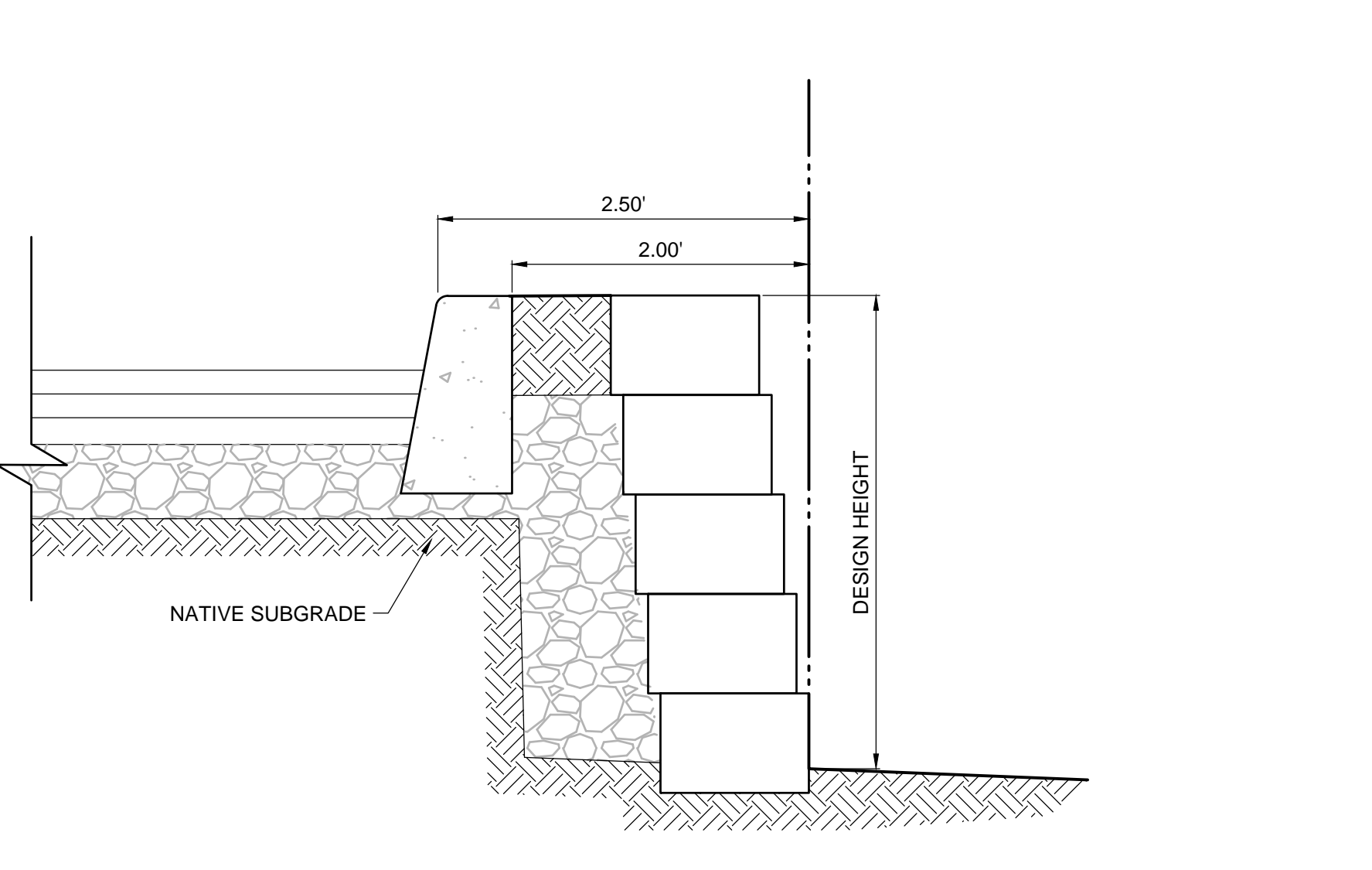
1 CONCRETE SIDEWALK AND JOINTS
 C5.10 N.T.S.



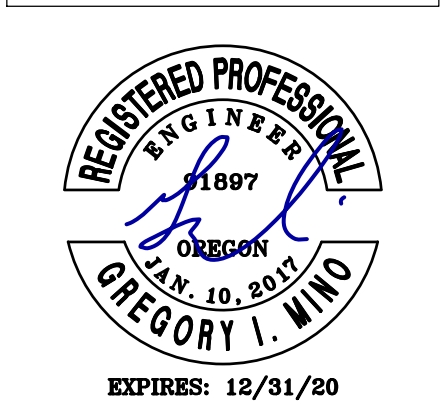
1 COMPACT CARPOOL
 C5.10 N.T.S.



1 CONCRETE SIDEWALK AND JOINTS
 C5.10 N.T.S.



12 SCHEMATIC WALL
 C5.10 N.T.S.



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| REVISION SCHEDULE | | |
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SHEET TITLE:
CIVIL DETAILS

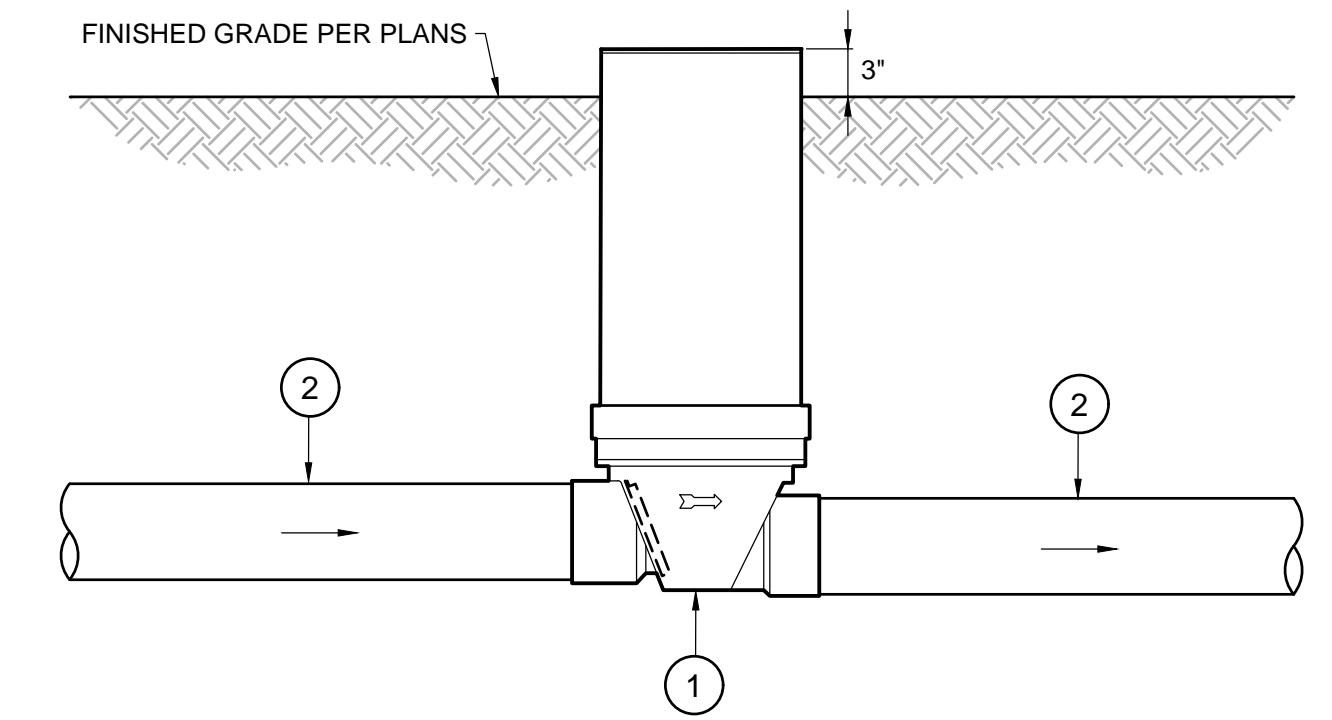
DRAWN BY: GIM

CHECKED BY: MWB

SHEET

C5.11

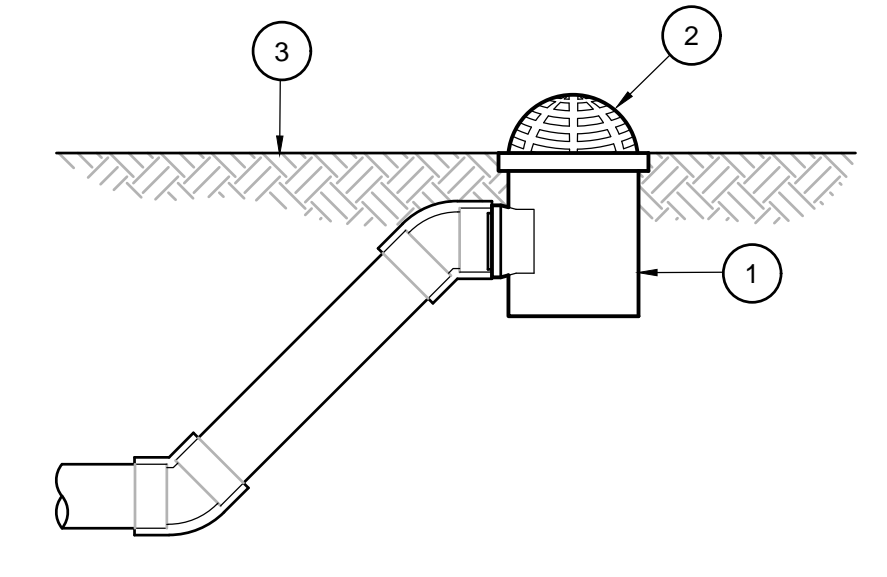
JOB NO. **2190365.00**



- KEYNOTES:**
- PVC BACKWATER VALVE WITH RISER EXTENSION AND LID
 - PIPE SIZE, INVERT, AND SLOPE PER PLANS

- NOTES:**
- BACKWATER VALVE AND ACCESSORIES SHALL BE PROCURED FROM THE SAME MANUFACTURER AND ASSEMBLED PER MANUFACTURER'S RECOMMENDATIONS
 - PROVIDE EXTENSION KIT FOR ACCESS FROM THE SURFACE WHERE DEPTH TO VALVE EXCEEDS 24 INCHES
 - THIS DETAIL IS NOT FOR USE IN VEHICULAR TRAVEL AREAS

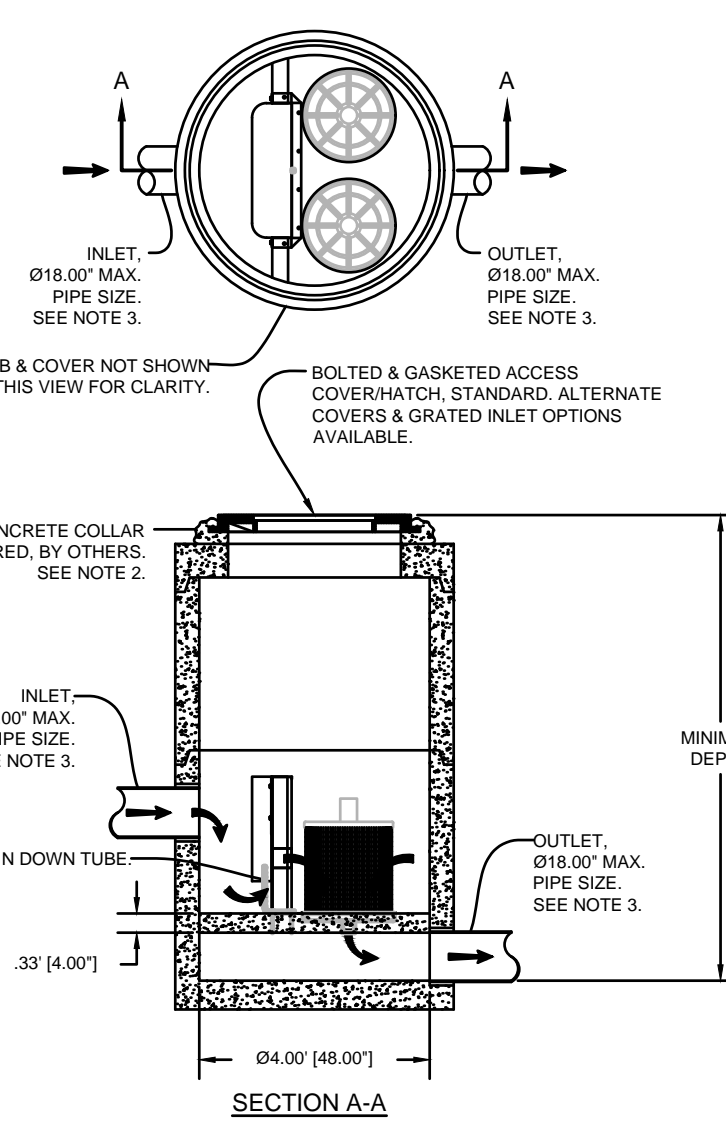
3 BACKWATER VALVE
C5.11 N.T.S.



- KEYNOTES:**
- PREFABRICATED PLASTIC SUMPED CATCH WITH OUTLET ADAPTER SIZED TO MATCH STORM LEADER PIPE. STORM LEADER TO BE 4 INCH DIAMETER UNLESS NOTED AS OTHERWISE ON PLANS
 - BLACK ATRIUM GRATE TO MATCH DRAIN BODY SIZE. GRATE SHALL BE 9 INCH SQUARE UNLESS NOTED AS OTHERWISE ON PLANS. MINIMUM OPEN SURFACE AREA FOR 9 INCH SQUARE GRATE SHALL BE 31.5 SQUARE INCHES, UNLESS OTHERWISE APPROVED BY THE ENGINEER
 - LANDSCAPE AREA PER PLANS. GRATE RIM ELEVATION SHALL BE SET FLUSH WITH FINAL LANDSCAPE GRADE, ALLOWING ATRIUM PORTION OF GRATE TO BE UNOBSERVED

- NOTES:**
- DRAIN BODY, GRATE, AND ADAPTERS SHALL BE PROCURED FROM THE SAME MANUFACTURER AND ASSEMBLED PER MANUFACTURER'S RECOMMENDATIONS

6 LANDSCAPE AREA DRAIN
C5.11 N.T.S.



Minimum Depth

| PIPE SIZE | Ø18.00" | Ø18.00" | Ø18.00" | Ø18.00" | Ø18.00" | Ø18.00" |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| CARTRIDGE TYPE | TO OUTLET | TO OUTLET | TO OUTLET | TO OUTLET | TO OUTLET | TO OUTLET |
| 12" | 3.67 (94.00) | 3.82 (97.00) | 4.17 (105.00) | 4.42 (112.00) | 4.67 (119.00) | 4.92 (125.00) |
| 16" | 4.42 (112.00) | 4.67 (119.00) | 5.02 (128.00) | 5.27 (134.00) | 5.52 (141.00) | 5.77 (147.00) |
| 18" x 12" | 5.17 (131.00) | 5.42 (138.00) | 5.77 (145.00) | 6.02 (152.00) | 6.27 (159.00) | 6.52 (166.00) |
| 12" x 18" | 5.67 (144.00) | 5.92 (151.00) | 6.27 (158.00) | 6.52 (165.00) | 6.77 (172.00) | 7.02 (179.00) |

TREATMENT FLOW RATES, TOTAL FLOW CAPACITIES & MAXIMUM HEAD LOSS

| CARTRIDGE QUANTITY | 12" | | 16" | | 18" x 12" | |
|--------------------|---------------------------|---------------------|---------------------------|---------------------|---------------------------|---------------------|
| | TOTAL FLOW CAPACITY (GPM) | PER FLOW RATE (GPM) | TOTAL FLOW CAPACITY (GPM) | PER FLOW RATE (GPM) | TOTAL FLOW CAPACITY (GPM) | PER FLOW RATE (GPM) |
| 1 | 121.0/2.0 | 2.42 | 181.0/3.6 | 3.62 | 241.0/4.8 | 4.82 |
| 2 | 241.0/4.8 | 2.42 | 361.0/7.2 | 3.62 | 481.0/9.6 | 4.82 |

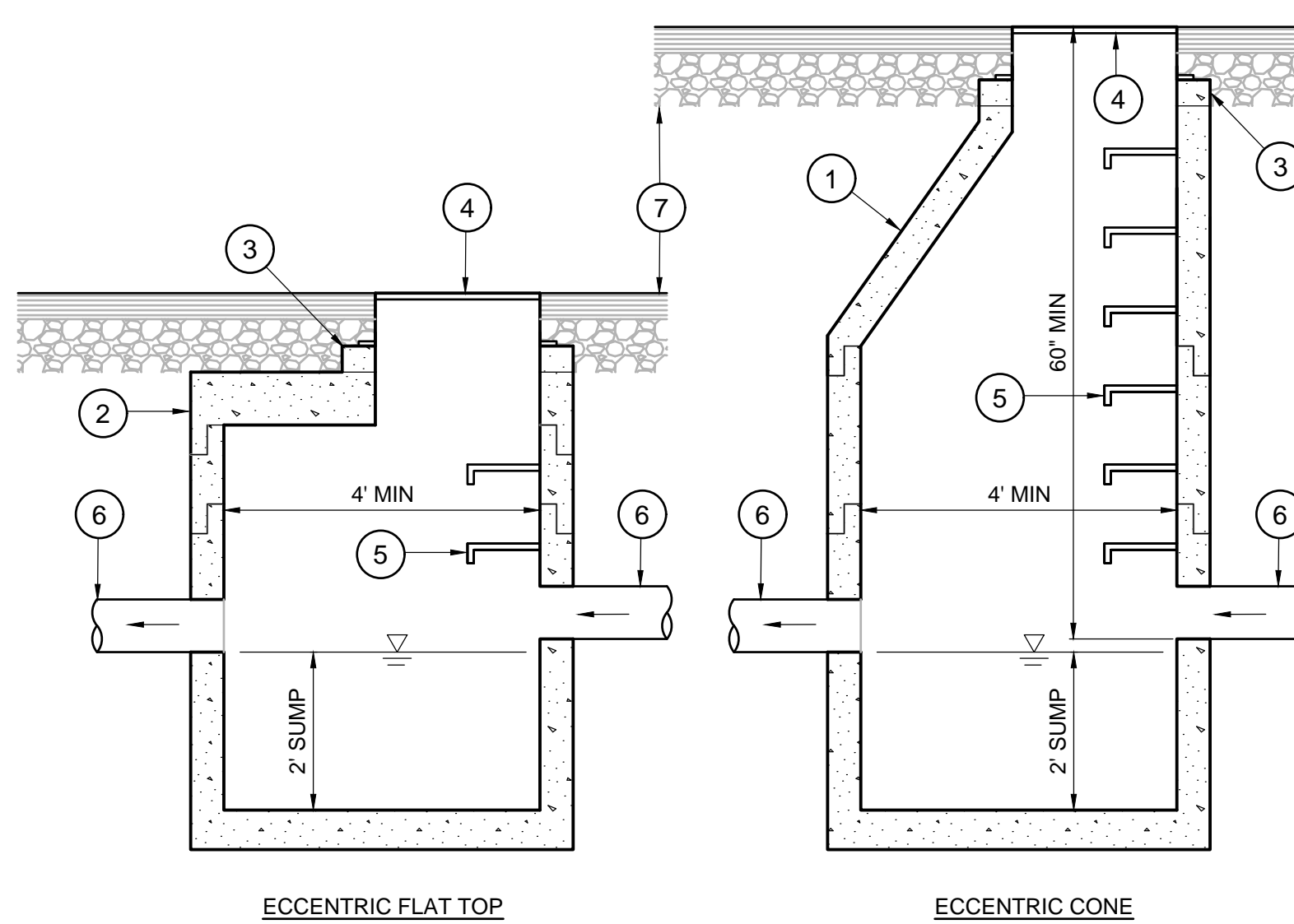
Perk Filter® Stormwater Solutions
Ø48.00" Manhole
One to Two Cartridges / Stacks

Oldcastle® Stormwater Solutions
7821 Southpark Plaza, Suite 200 | Littleton, CO | (303) 211-8000 | oldcastlestormwater.com

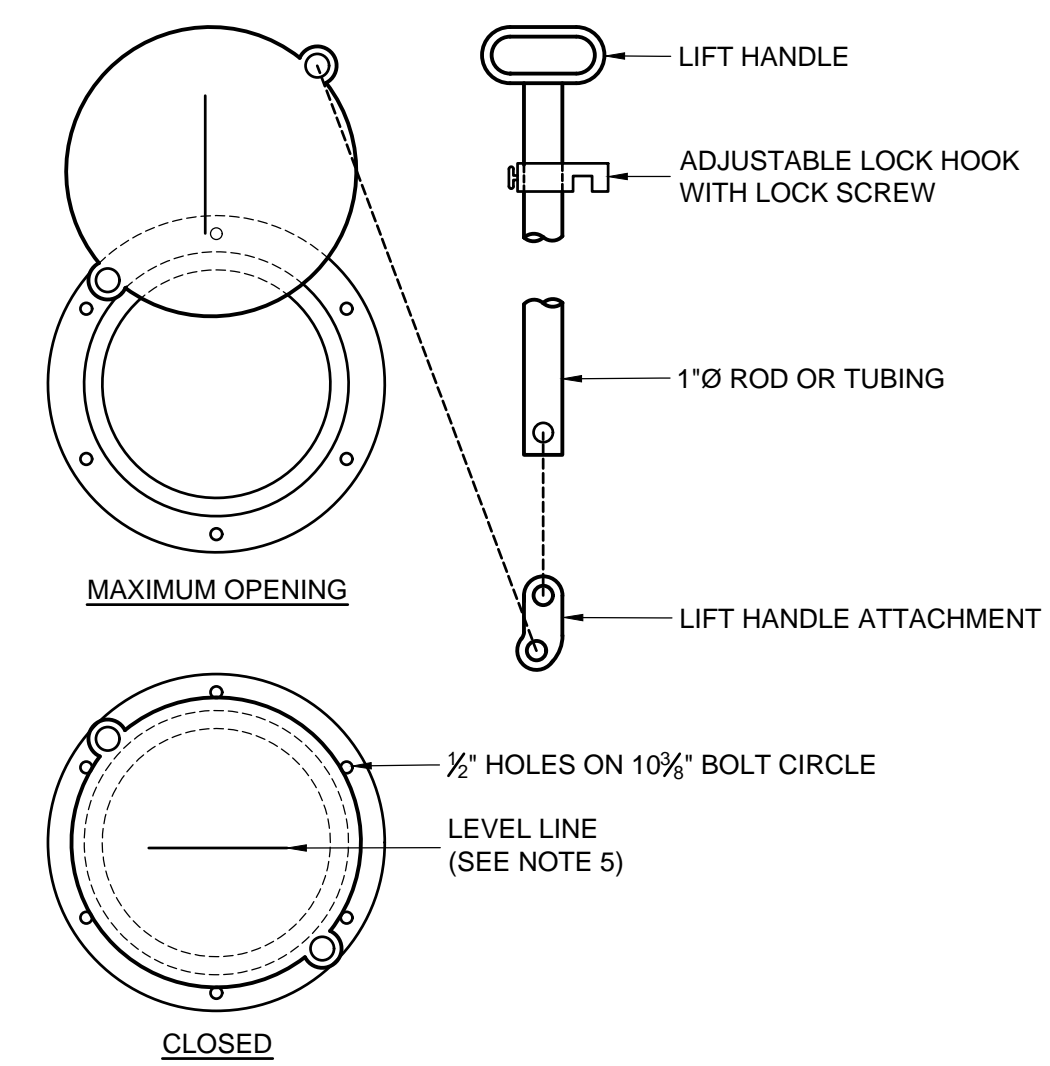
Perk Filter® Stormwater Solutions
One to Two Cartridges / Stacks

- KEYNOTES:**
- 48" MIN DIAMETER PRECAST CONCRETE MANHOLE WITH ECCENTRIC CONE
 - 48" MIN DIAMETER PRECAST CONCRETE FLAT TOP MANHOLE (USED WHEN LESS THAN 60" AVAILABLE FROM PIPE INVERT TO RIM). CONCENTRIC LID SHALL BE USED AND STEPS SHALL BE OMITTED WHEN DEPTH FROM RIM TO INVERT IS LESS THAN 3 FEET
 - PRECAST CONCRETE GRADE RING AS REQUIRED TO ACCOMMODATE PAVING SECTION (12" TOTAL, MAX)
 - MANHOLE FRAME AND COVER PER PROJECT SPECIFICATIONS, RIM ELEVATION PER CIVIL PLANS
 - 6 1/2" MIN LONG MANHOLE STEPS AT 12" ON CENTER PER PROJECT SPECIFICATIONS. LOCATE WITHIN 24" OF COVER AND FLOOR OF MANHOLE, AND A MINIMUM OF 5" FROM PRECAST SECTION JOINT
 - PIPE SIZE, INVERT, AND SLOPE PER PLANS
 - PAVING SECTION PER PLANS

- NOTES:**
- MANHOLE DIAMETER SHALL BE INCREASED, IF REQUIRED, TO PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN PIPE CONNECTIONS, OR WHEN ANY PIPE DIAMETER IS GREATER THAN 1/2 THE DIAMETER OF THE MANHOLE
 - MANHOLE ACCESS COVER SHALL NOT BE LOCATED DIRECTLY OVER A PIPE CONNECTION UNLESS DIRECTED OTHERWISE BY THE ENGINEER
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MANHOLES FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO PROCURING MATERIALS
 - SELECTED MANHOLE SHALL MEET THE CRITERIA OF THE PROJECT SPECIFICATIONS AND BE INSTALLED ACCORDINGLY
 - INLET AND OUTLET PIPES CONNECTIONS SHALL BE COMPLIANT WITH PROJECT SPECIFICATIONS OR THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, WHICHEVER IS MOST STRINGENT



2 STORM SEWER MANHOLES
C5.11 N.T.S.

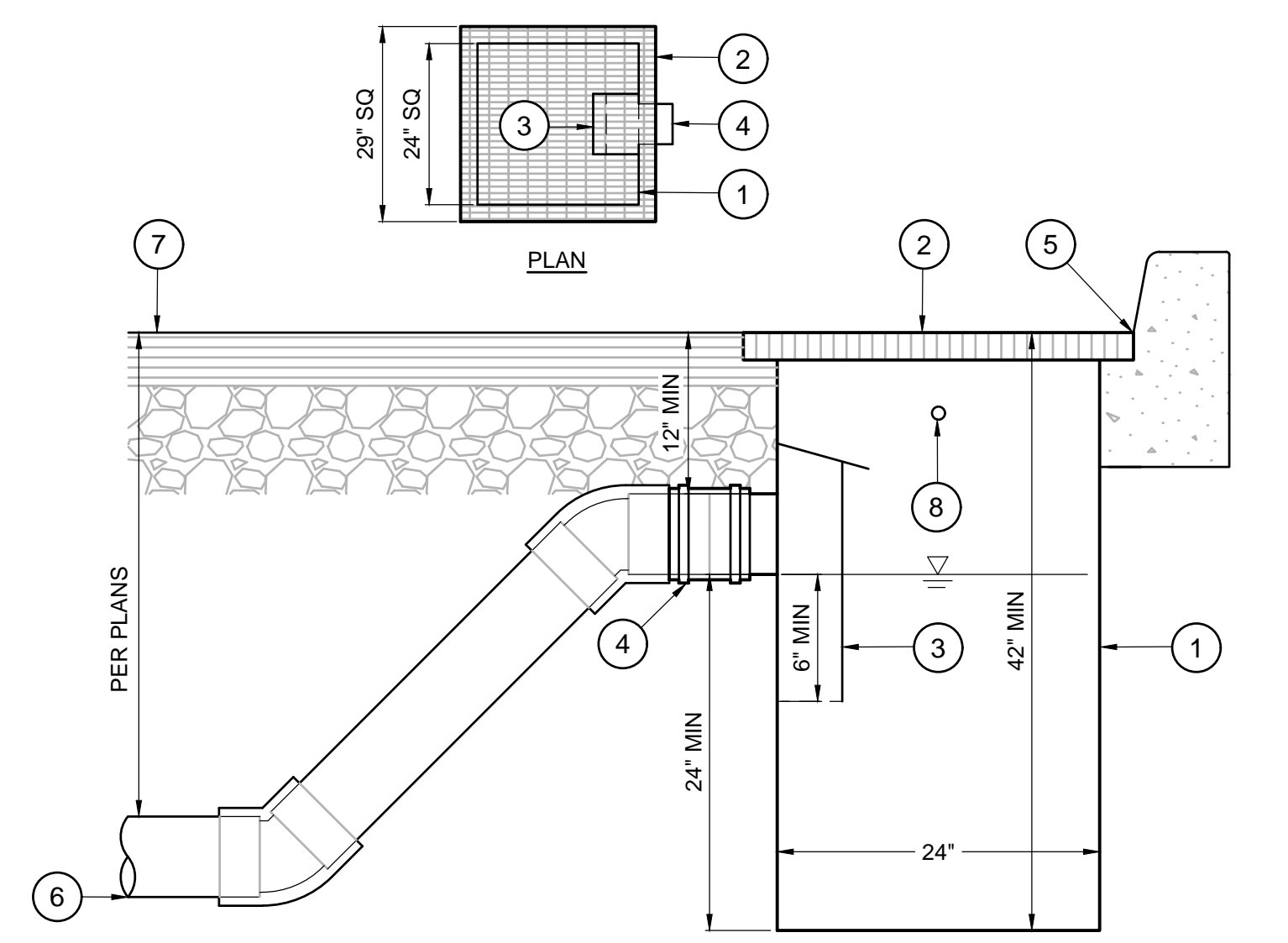


- NOTES:**
- THE FRAME AND LADDER OR STEPS ARE TO BE OFFSET SO THAT: THE SHEAR GATE IS VISIBLE FROM THE TOP; THE CLIMB-DOWN SPACE IS CLEAR OF RISER AND GATE; THE FRAME IS CLEAR OF THE CURB (IF APPLICABLE)
 - THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION ZG32A; OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B
 - THE LIFT HANDLE SHALL BE MADE OF SIMILAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION)
 - A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE PIPE MOUNTING FLANGE AND THE GATE FLANGE
 - INSTALL THE GATE SO THAT THE LEVEL-LINE IS LEVEL WHEN THE GATE IS CLOSED
 - THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED TO PROPER FIT
 - ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL
 - THE SHEAR GATE MAXIMUM OPENING SHALL BE CONTROLLED BY LIMITED HINGE MOVEMENT, A STOP TAB, OR SOME OTHER DEVICE
 - ALTERNATIVE SHEAR GATE DESIGNS ARE ACCEPTABLE, IF MATERIAL SPECIFICATIONS ARE MET AND FLANGE BOLT PATTERN MATCHES. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ENGINEER PRIOR TO ORDERING OR CONSTRUCTION

5 SHEAR GATE
C5.11 N.T.S.

- KEYNOTES:**
- PREFABRICATED, ASPHALT DIPPED, 10 GAUGE STEEL SUMPED CATCH BASIN WITH INTEGRAL GRATE FRAME
 - BIKE PROOF, HEAVY DUTY REMOVABLE TRAFFIC GRATE CAPABLE OF SUPPORTING H2O LOADING
 - SEDIMENT TRAP WITH HINGED LID
 - INSTALL FLEXIBLE CLAMPED COUPLING ON INTEGRAL CATCH BASIN OUTLET. IMMEDIATELY TURN DOWN PIPING AT 45 DEGREES TO INTERSECT WITH THE SITE PIPING
 - LOCATE CATCH BASIN SUCH THAT THE EDGE OF GRATE FRAME IS INLINE WITH THE ABUTTING CURBLINE (WHERE APPLIES)
 - PIPE SIZE, INVERT, AND SLOPE PER PLANS
 - PAVING SECTION PER PLANS
 - 1/2 INCH TO 1 INCH DIAMETER WEEPHOLES, MINIMUM 1 PER SIDE. CONTRACTOR SHALL VERIFY COMPLIANCE WITH LOCAL JURISDICTION PRIOR TO PROCURING MATERIALS

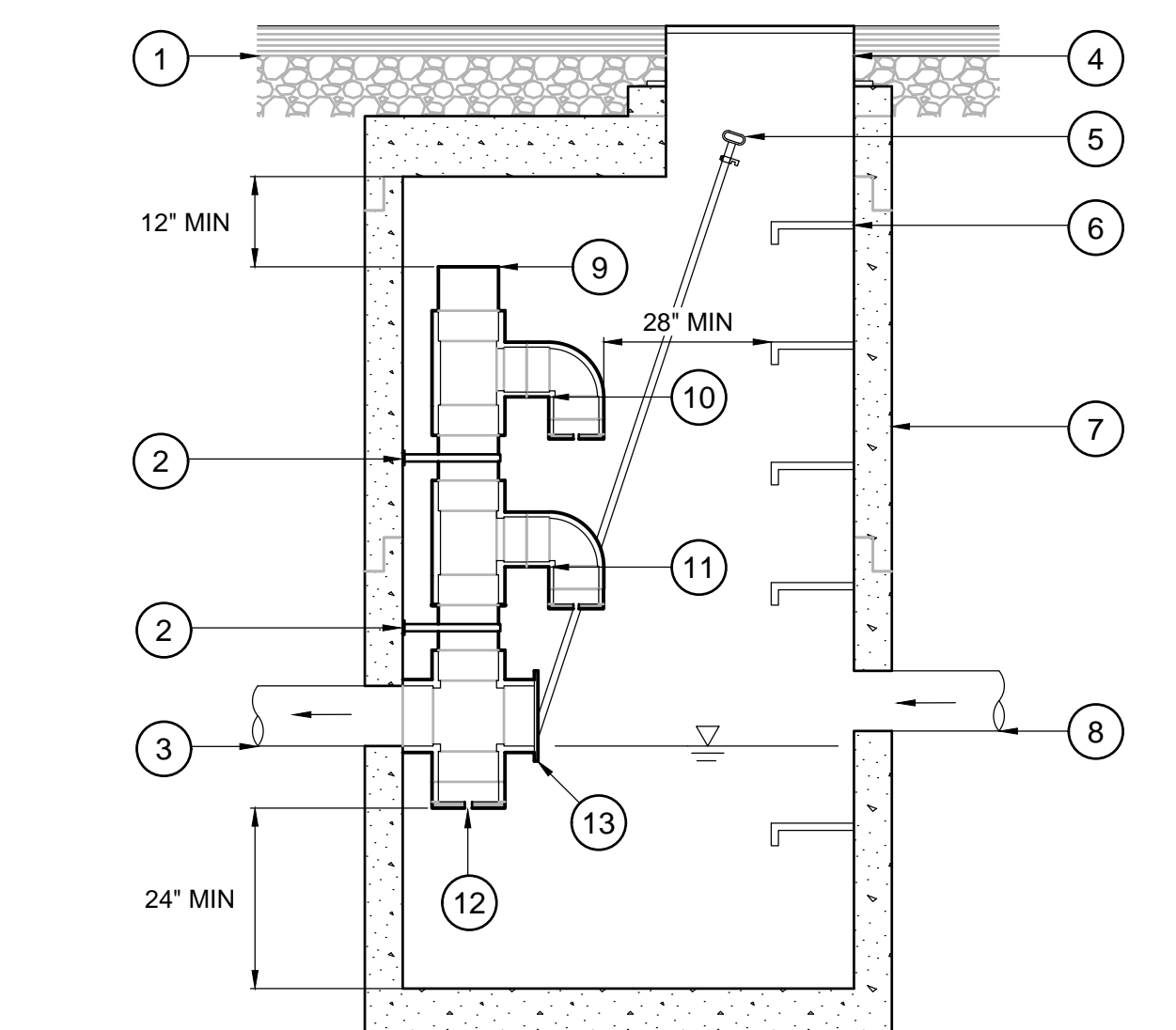
- NOTES:**
- ALL PRODUCTS USED SHALL BE COMPLIANT WITH BOTH THE UNIFORM AND LOCAL JURISDICTION PLUMBING CODES
 - WHERE ABUTTING CURBING, GRATE SHALL BE ORIENTED SO THAT THE ELONGATED PATTERN IS PERPENDICULAR TO THE CURB FACE



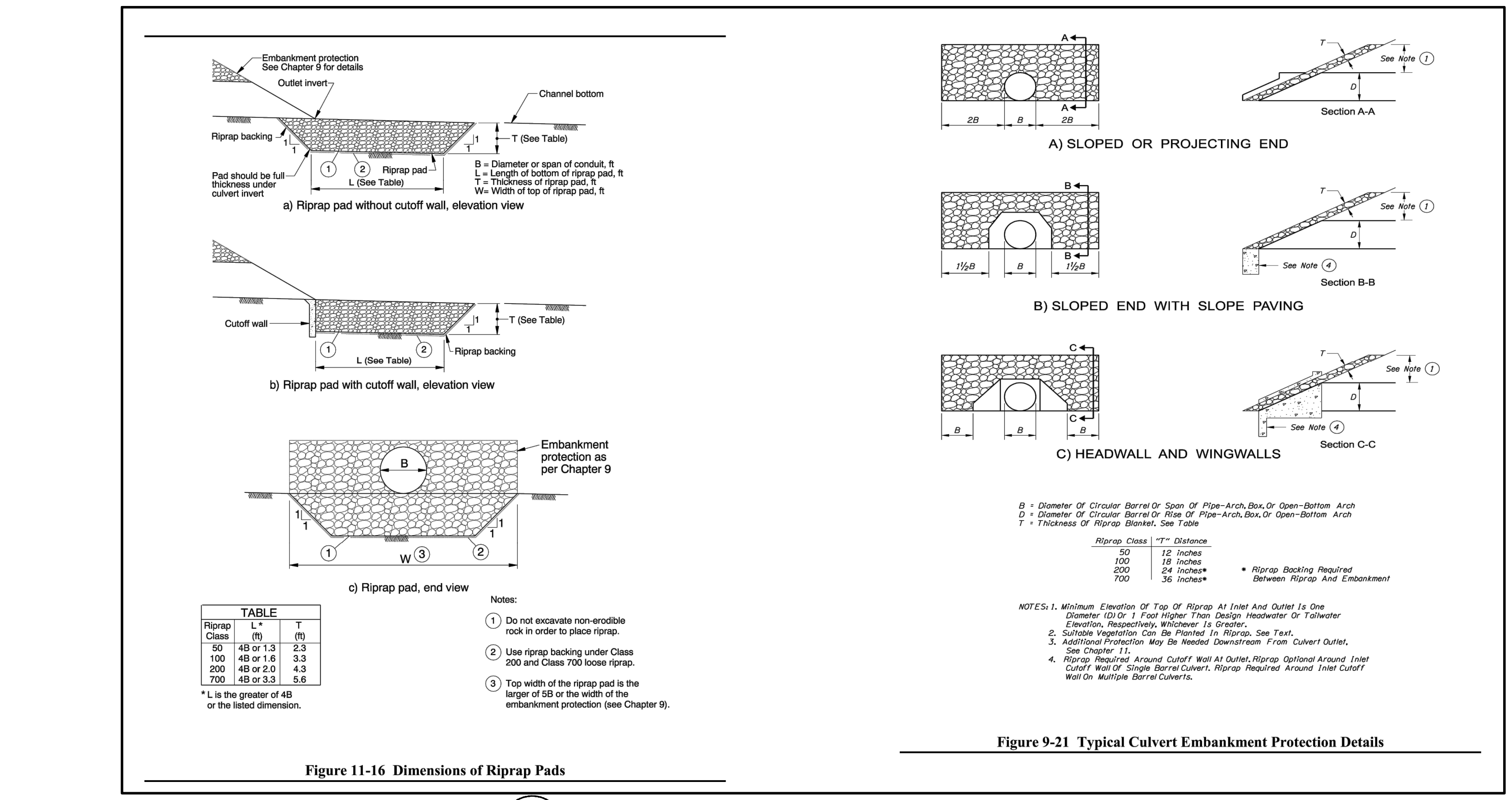
1 STEEL CATCH BASIN
C5.11 N.T.S.

- KEYNOTES:**
- PAVING SECTION PER PLANS
 - SECURE PIPE STACK TO MANHOLE WITH RUST PROOF TIE STRAPS AND BOLTS
 - OUTLET PIPE SIZE, INVERT, AND SLOPE PER PLANS
 - STANDARD MANHOLE FRAME AND COVER. RIM ELEVATION PER PLANS
 - LIFT HANDLE FOR SHEAR GATE. SEE DETAIL 5/C5.11
 - MANHOLE STEP PER MANHOLE DETAIL AND PROJECT SPECIFICATIONS, TYP
 - MANHOLE PER MANHOLE DETAIL AND PROJECT SPECIFICATIONS, TYP
 - INLET PIPE SIZE, INVERT, AND SLOPE PER PLANS
 - OVERFLOW SIZE AND ELEVATION = XX', XXX.XX
 - ORIFICE 3 SIZE AND ELEVATION = XX', XXX.XX or N/A
 - ORIFICE 2 SIZE AND ELEVATION = XX', XXX.XX or N/A
 - ORIFICE 1 SIZE AND ELEVATION = XX', XXX.XX
 - SHEAR GATE PER DETAIL 5/C5.11

- NOTES:**
- CONTRACTOR IS RESPONSIBLE FOR SELECTING THE MANHOLE SIZE, TYPE, AND MATERIAL BASED UPON PROJECT SITE CONDITIONS, PROJECT PLANS & SPECIFICATIONS, AND THE DIMENSIONAL CRITERIA HEREON
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL FLOW CONTROL MANHOLES FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO PROCURING MATERIALS
 - SELECTED MANHOLE SHALL MEET THE CRITERIA OF THE PROJECT SPECIFICATIONS AND BE INSTALLED ACCORDINGLY
 - INLET AND OUTLET PIPES CONNECTIONS SHALL BE COMPLIANT WITH PROJECT SPECIFICATIONS OR THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION, WHICHEVER IS MOST STRINGENT
 - UNLESS NOTED OTHERWISE, PIPE STACK, CROSS FITTING FOR ORIFICE 1 & SHEAR GATE, AND OVERFLOW SHALL BE THE SIZE OF THE OUTLET PIPE. USE REDUCING TEES AS APPROPRIATE FOR THE ADDITIONAL ORIFICES TO OPTIMIZE SPACE CONSTRAINTS



4 FLOW CONTROL MANHOLE
C5.11 N.T.S.

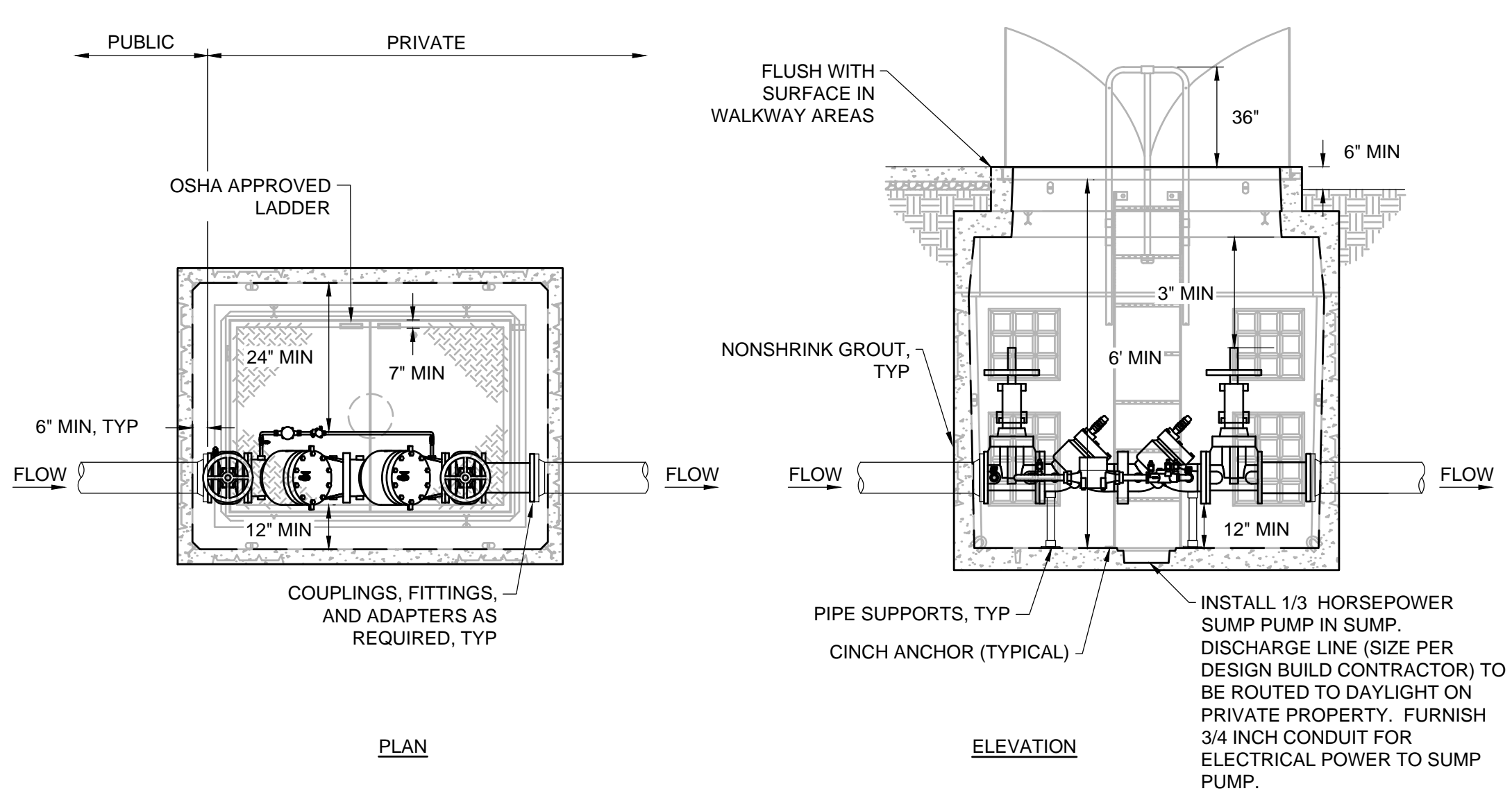


7 RIP RAP PAD
C5.11 N.T.S.

TABLE

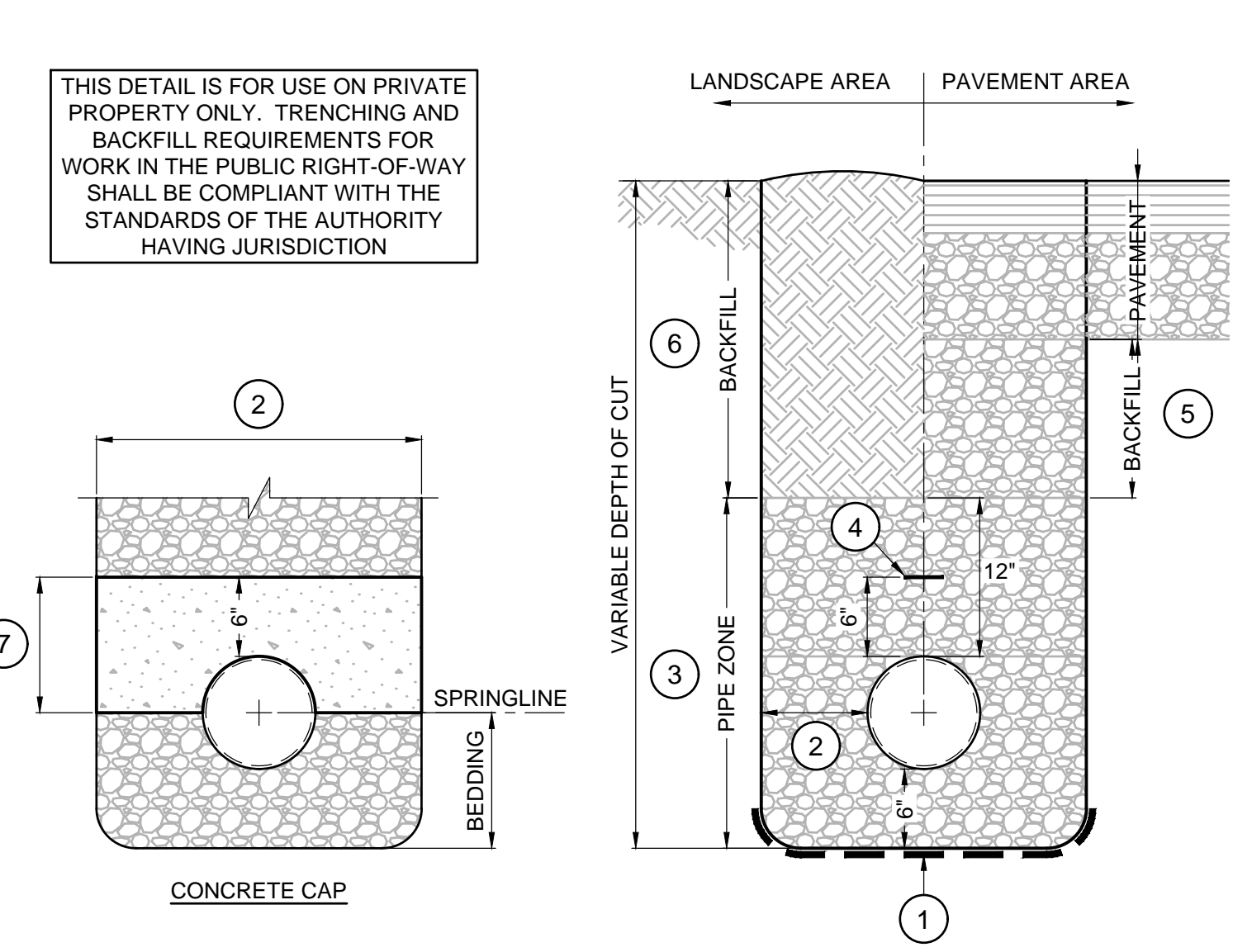
| Riprap Class | L* | T |
|--------------|-----------|-----|
| 50 | 48 or 1.3 | 2.3 |
| 100 | 48 or 1.6 | 3.3 |
| 200 | 48 or 2.0 | 4.3 |
| 700 | 48 or 3.3 | 5.6 |

*L is the greater of 48 or the listed dimension.



BACKFLOW PREVENTER SHALL BE APPROVED BY THE STATE HEALTH DEPARTMENT AND PLUMBING CODE
VAULT SHALL BE PRECAST CONCRETE WITH GALVANIZED HINGED ACCESS DOORS (OLDCASTLE, OR EQUAL)
VAULT SHALL BE MECHANICALLY LOCKED AND VALVES SHALL BE PROVIDED WITH ELECTRONIC TAMPER SWITCHES

| APPROXIMATE VAULT SIZES | BACKFLOW (DIAMETER) | VAULT (OUTSIDE) |
|-------------------------|----------------------------------|-----------------|
| 3 INCH | 7'-0" (L) 4'-8" (W) 7'-0" (H) | |
| 4 INCH | 7'-0" (L) 4'-8" (W) 7'-0" (H) | |
| 6 INCH | 8'-8" (L) 6'-8" (W) 8'-1" (H) | |
| 8 INCH | 8'-8" (L) 6'-8" (W) 8'-1" (H) | |
| 10 INCH | 8'-8" (L) 6'-8" (W) 8'-1" (H) | |



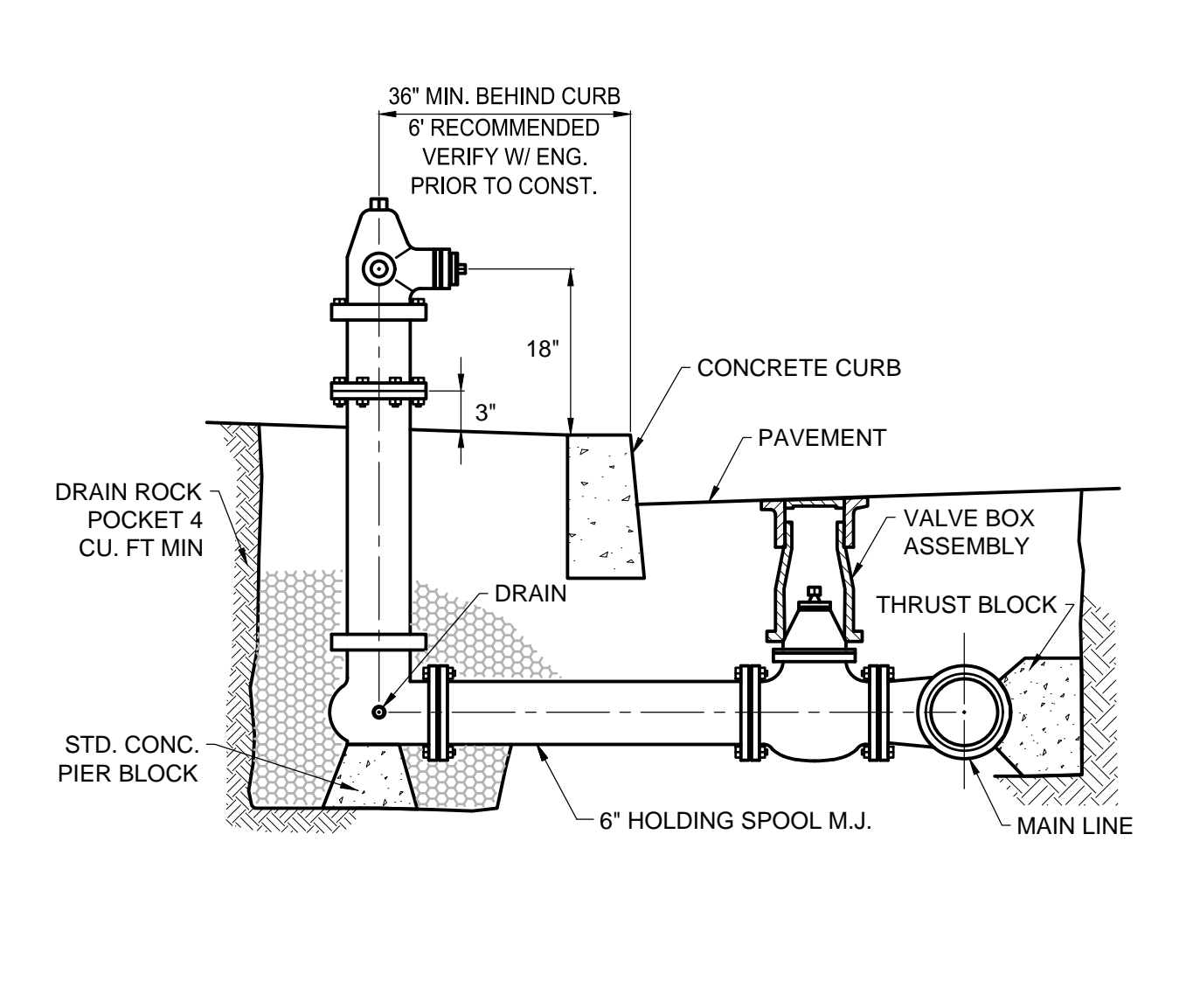
THIS DETAIL IS FOR USE ON PRIVATE PROPERTY ONLY. TRENCHING AND BACKFILL REQUIREMENTS FOR WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE COMPLIANT WITH THE STANDARDS OF THE AUTHORITY HAVING JURISDICTION

KEYNOTES:

- INSTALL TRENCH STABILIZATION AS REQUIRED BY THE GEOTECHNICAL ENGINEER
- TRENCH WIDTH SHALL ACCOMMODATE THE PIPE DIAMETER PLUS ONE ADDITIONAL PIPE DIAMETER ON EITHER SIDE OF THE PIPE, BUT IN NO CASE LESS THAN 6 INCHES OR MORE THAN 18 INCHES
- PIPE ZONE TO CONSIST OF IMPORTED GRANULAR MATERIAL TRACER WIRE
- BACKFILL IN PAVEMENT AREAS WITH IMPORTED GRANULAR MATERIAL TO PAVEMENT SUBGRADE ELEVATION
- BACKFILL IN LANDSCAPE AREAS WITH NATIVE MATERIAL TO PLANTER SUBGRADE ELEVATION, MOUND TOP TO SHED AT 2% EACH DIRECTION IF TRENCH IS LOCATED IN UNDEVELOPED, NON-LANDSCAPED AREAS
- CONCRETE CAP, WHERE CALLED OUT ON PLANS, OR WHERE PIPE COVER IS LESS THAN 12 INCHES IN VEHICULAR AREAS, PROVIDE 6 INCH THICK CONCRETE CAP THE WIDTH OF THE TRENCH, BEARING ON THE BEDDING HAUNCHING AT THE SPRINGLINE OF THE PIPE

NOTES:

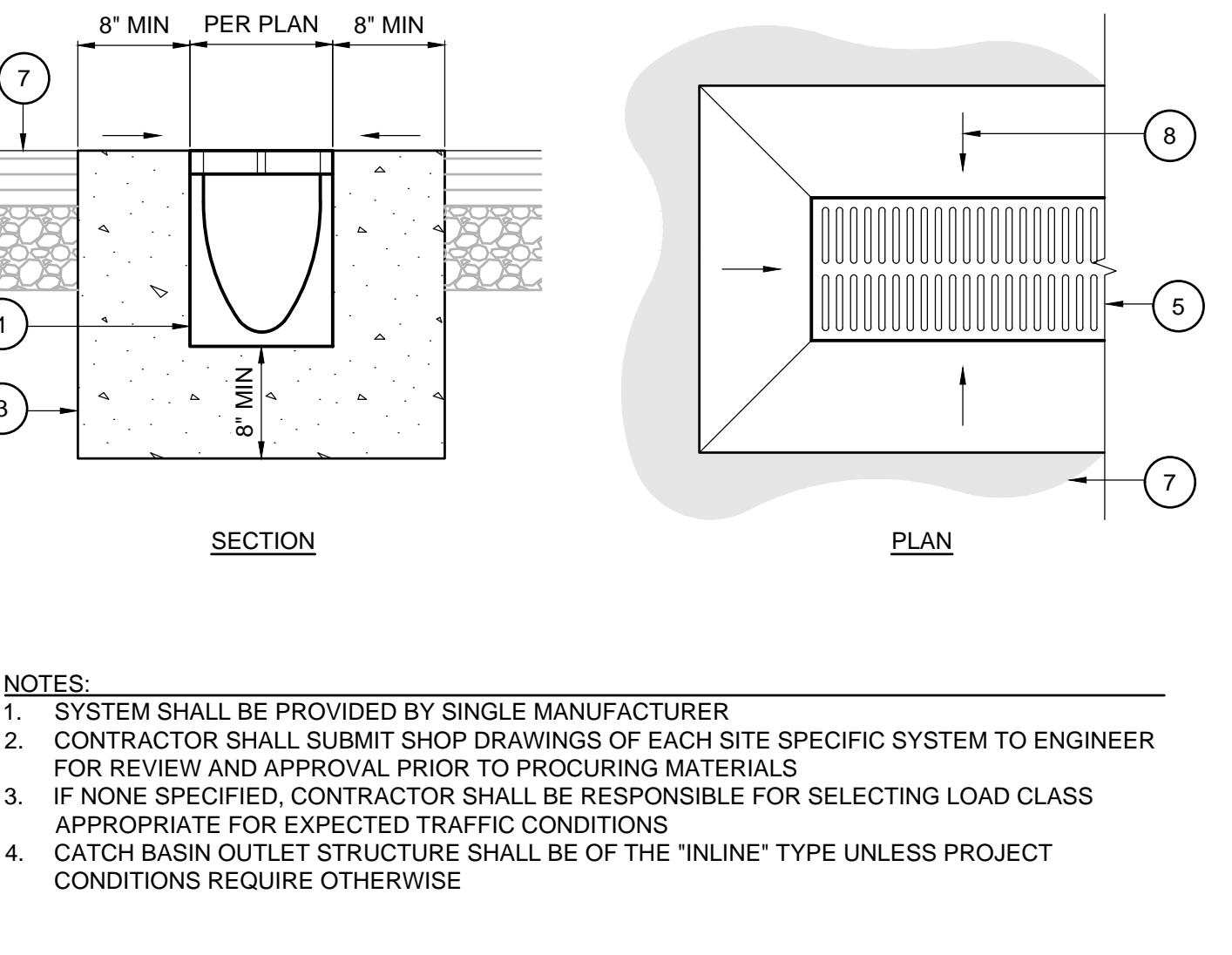
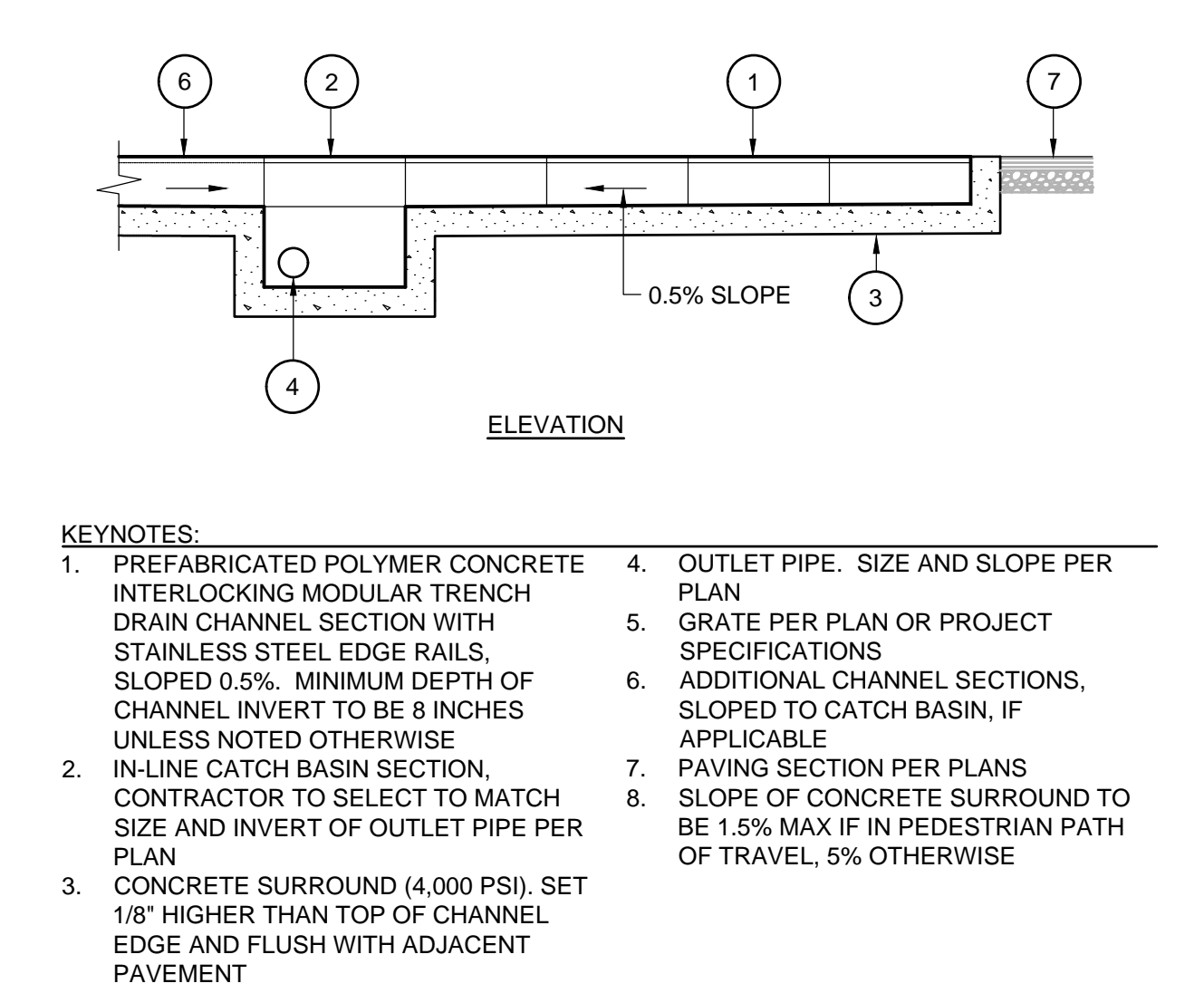
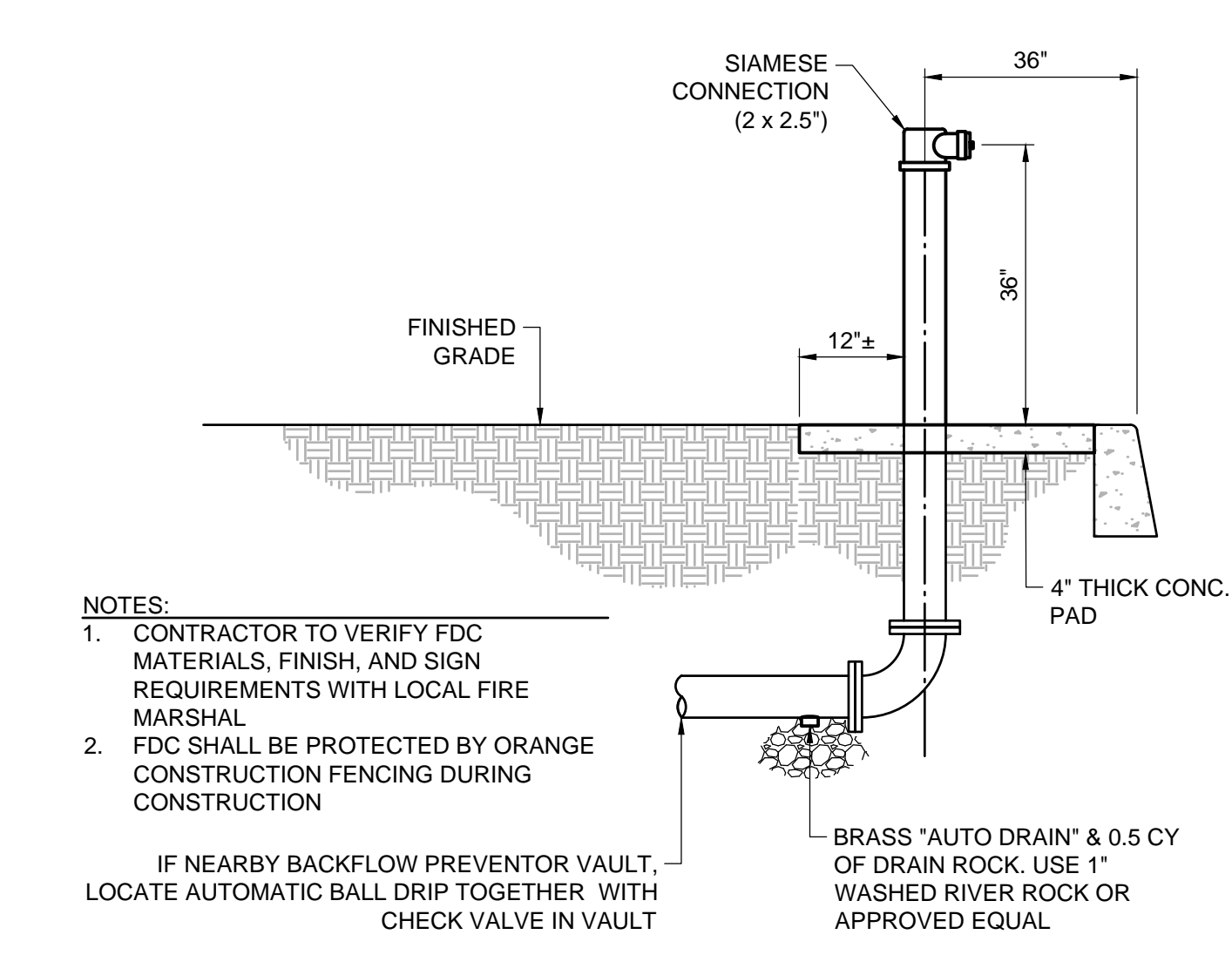
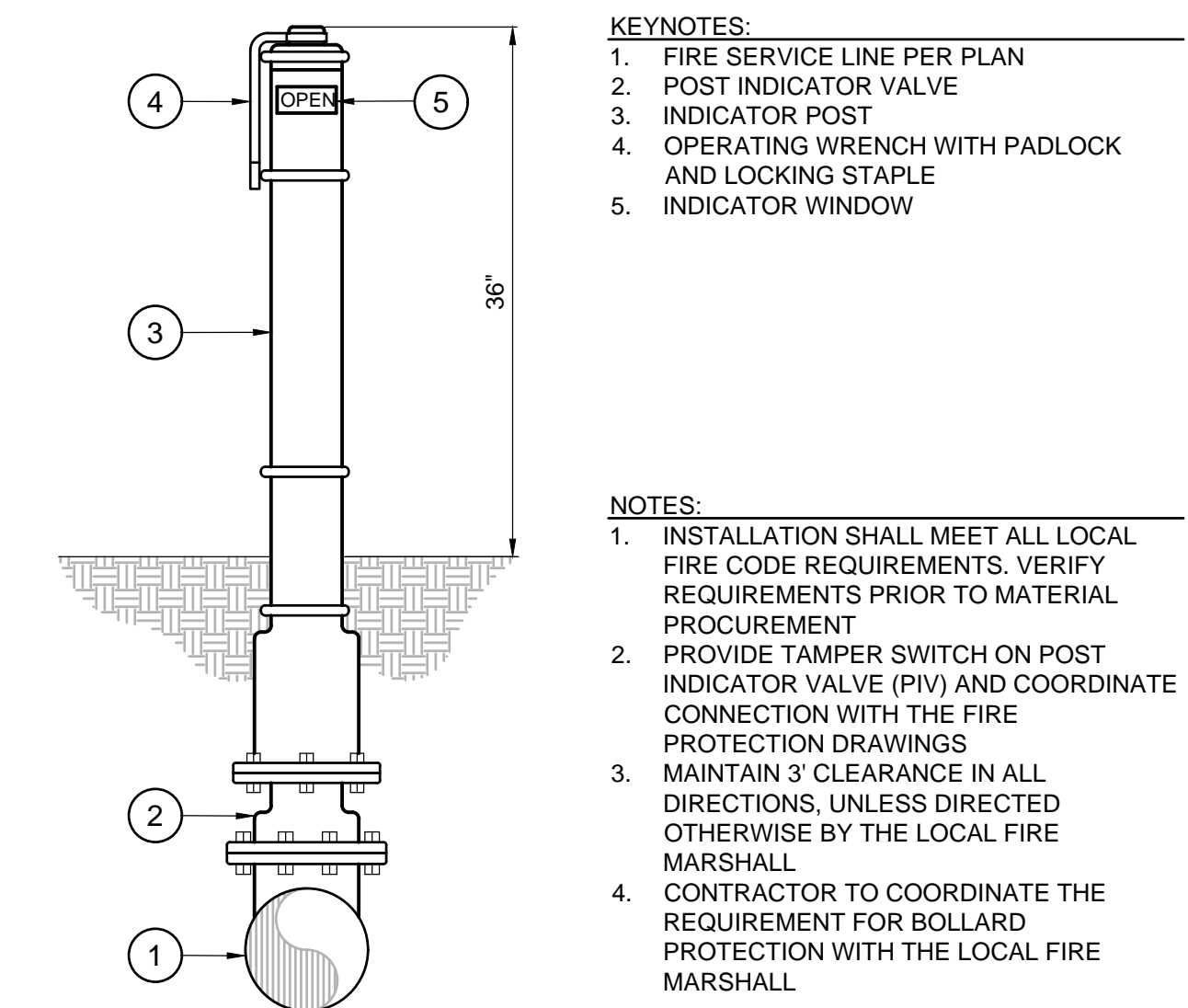
- SEE GEOTECHNICAL REPORT AND PROJECT SPECIFICATIONS FOR RECOMMENDED MATERIALS AND FURTHER REQUIREMENTS (i.e. MINIMUM COMPACTION)
- IF GROUNDWATER IS ENCOUNTERED, CONSULT THE GEOTECHNICAL ENGINEER OF RECORD FOR ADDITIONAL RECOMMENDATIONS WITH REGARD TO TRENCHING, PIPE PLACEMENT, AND BACKFILL



1 DOUBLE CHECK DETECTOR AND VAULT
C5.12 NTS

2 UTILITY TRENCH BEDDING AND BACKFILL
C5.12 NTS

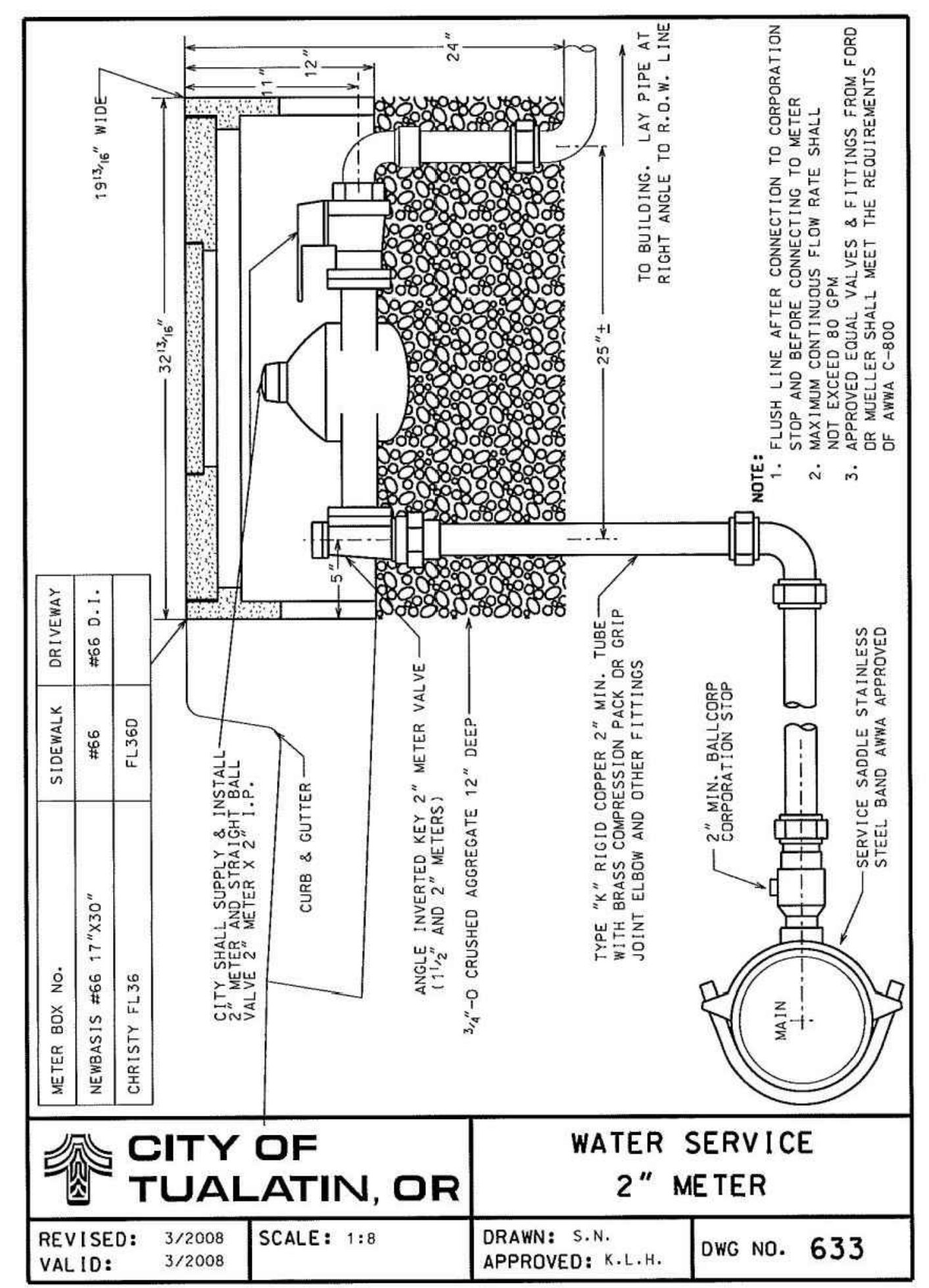
3 FIRE HYDRANT
C5.12 NTS



4 POST INDICATOR VALVE
C5.12 NTS

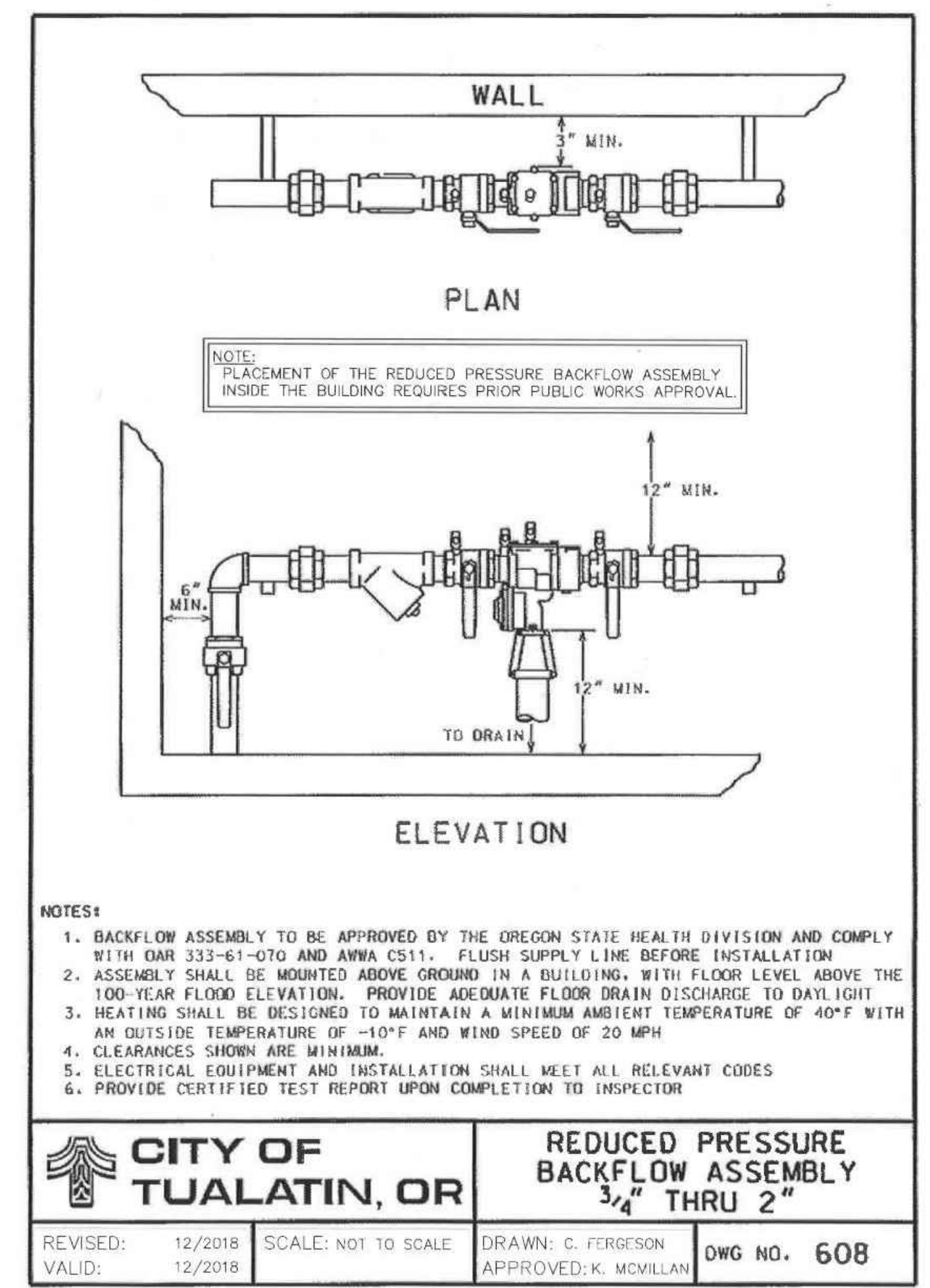
5 FIRE DEPARTMENT CONNECTION
C5.12 NTS

6 TRENCH DRAIN
C5.12 NTS



CITY OF TUALATIN, OR
WATER SERVICE
2" METER

| | | | | |
|---------------------|----------|------------|------------------|-------------|
| METER BOX NO: | DRIVEWAY | SCALE: 1:8 | DRAWN: S.N. | DWG NO. 633 |
| HERBASIS #66-177X30 | #66 D.L. | | APPROVED: K.L.H. | |
| CHRISTY FL36 | FL360 | | | |

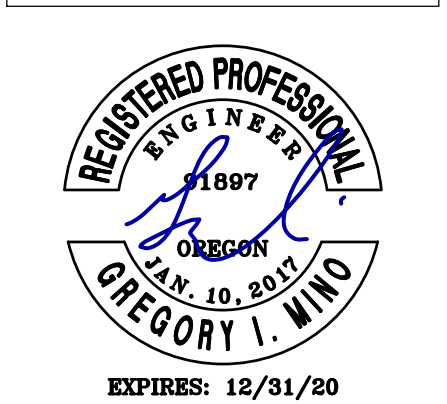


CITY OF TUALATIN, OR
REDUCED PRESSURE
BACKFLOW ASSEMBLY
3/4" THRU 2"

| | | | |
|------------------|---------------------|-----------------------|-------------|
| REVISED: 12/2018 | SCALE: NOT TO SCALE | DRAWN: C. FERGUSON | DWG NO. 608 |
| VALID: 12/2018 | | APPROVED: K. MCVILLAN | |

7 WATER SERVICE - 2" METER
C5.12 CITY OF TUALATIN DWG NO. 633 NTS

8 RPBA 3/4" TO 2"
C5.12 CITY OF TUALATIN DWG NO. 608 NTS



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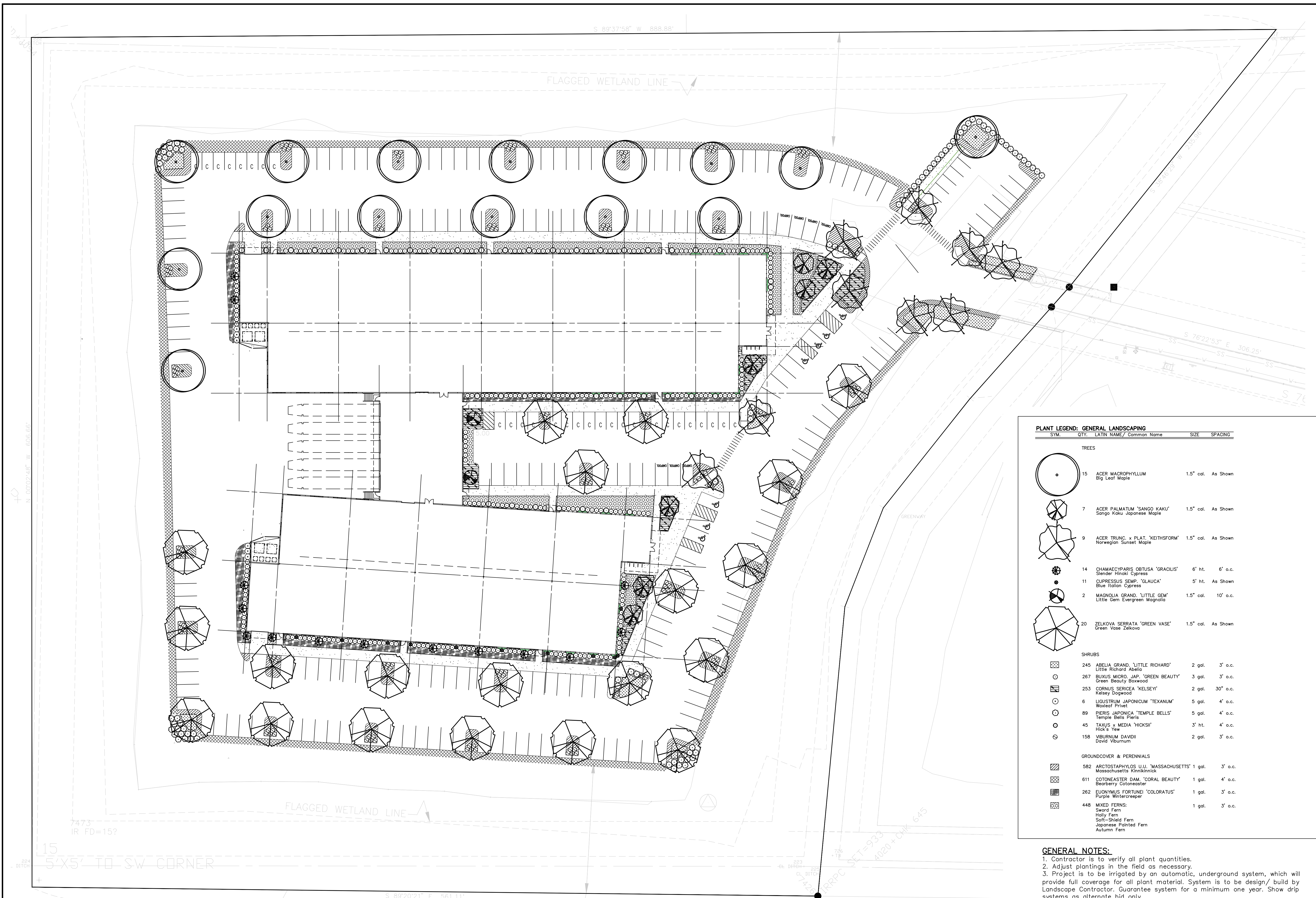
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SHEET TITLE:
CIVIL DETAILS

DRAWN BY: SIM
CHECKED BY: MWB
SHEET

C5.12

JOB NO. 2190365.00



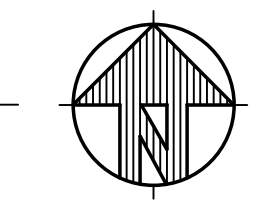
PLANT LEGEND: GENERAL LANDSCAPING

| SYM. | QTY. | LATIN NAME / Common Name | SIZE | SPACING |
|-------------------------------------|------|--|-----------|----------|
| TREES | | | | |
| | 15 | ACER MACROPHYLLUM Big Leaf Maple | 1.5" cal. | As Shown |
| | 7 | ACER PALMATUM 'SANGO KAKU' Sango Kaku Japanese Maple | 1.5" cal. | As Shown |
| | 9 | ACER TRUNC. x PLAT. 'KEITHSFORM' Norwegian Sunset Maple | 1.5" cal. | As Shown |
| | 14 | CHAMAECYPARIS OBTUSA 'GRACILIS' Slender Hinoki Cypress | 6' ht. | 6' o.c. |
| | 11 | CUPRESSUS SEMP. 'GLAUCA' Blue Italian Cypress | 5' ht. | As Shown |
| | 2 | MAGNOLIA GRAND. 'LITTLE GEM' Little Gem Evergreen Magnolia | 1.5" cal. | 10' o.c. |
| | 20 | ZELKOVA SERRATA 'GREEN VASE' Green Vase Zelkova | 1.5" cal. | As Shown |
| SHRUBS | | | | |
| | 245 | ABELIA GRAND. 'LITTLE RICHARD' Little Richard Abelia | 2 gal. | 3' o.c. |
| | 267 | BUXUS MICRO. JAP. 'GREEN BEAUTY' Green Beauty Boxwood | 3 gal. | 3' o.c. |
| | 253 | CORNUS SERICEA 'KELSEY' Kelsey Dogwood | 2 gal. | 30" o.c. |
| | 6 | LIGUSTRUM JAPONICUM 'TEXANUM' Waxleaf Privet | 5 gal. | 4' o.c. |
| | 89 | PIERIS JAPONICA 'TEMPLE BELLS' Temple Bells Pieris | 5 gal. | 4' o.c. |
| | 45 | TAXUS x MEDIA 'HICKSII' Hick's Yew | 3' ht. | 4' o.c. |
| | 158 | VIBURNUM DAVIDII David Viburnum | 2 gal. | 3' o.c. |
| GROUNDCOVER & PERENNIALS | | | | |
| | 582 | ARCTOSTAPHYLOS ULU. 'MASSACHUSETTS' Massachusetts Kinnikinnick | 1 gal. | 3' o.c. |
| | 611 | COTONEASTER DAM. 'CORAL BEAUTY' Bearberry Cotoneaster | 1 gal. | 4' o.c. |
| | 262 | ELYMUS FORTUNEI 'COLORATUS' Purple Wintercreeper | 1 gal. | 3' o.c. |
| | 448 | MIXED FERNS: Sword Fern Holly Fern Soft-Shield Fern Japanese Painted Fern Autumn Fern | 1 gal. | 3' o.c. |

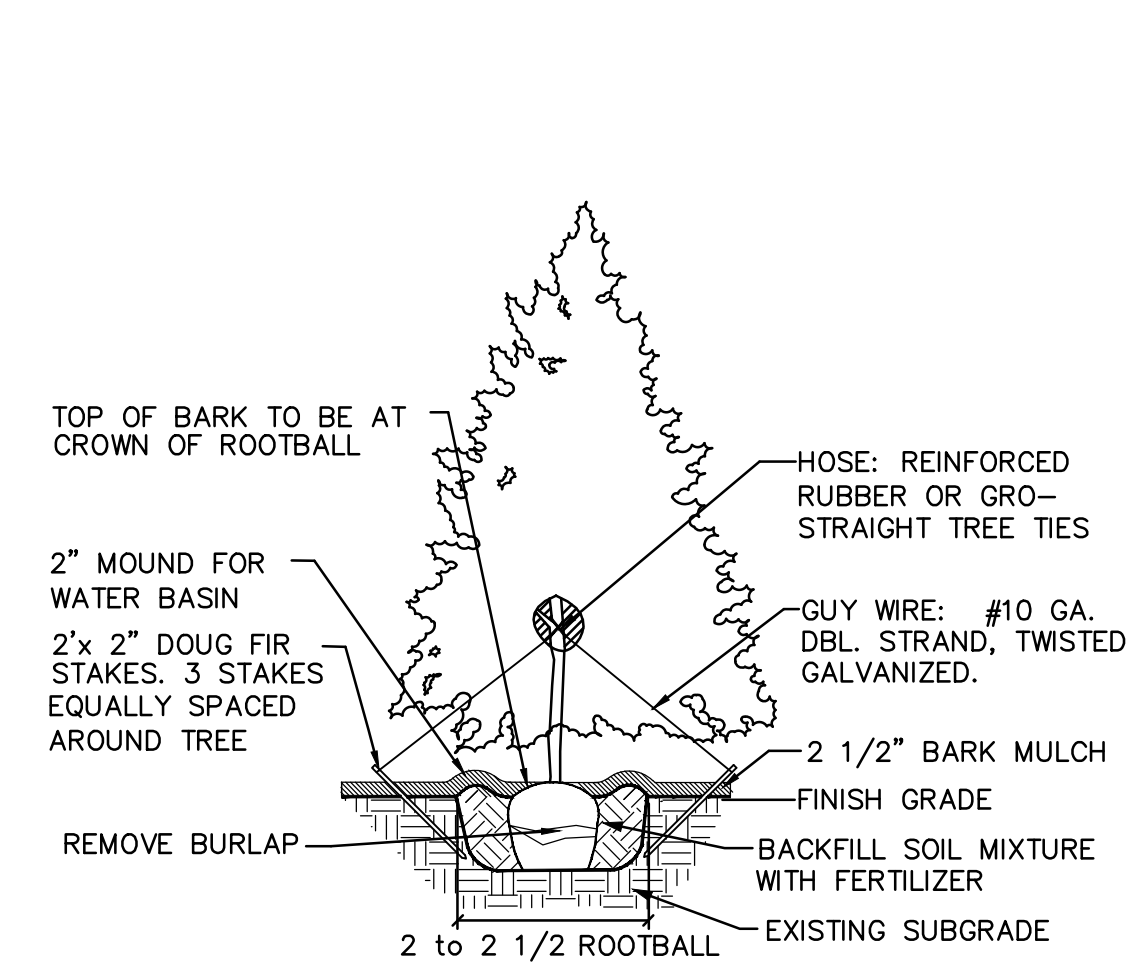
GENERAL NOTES:

- Contractor is to verify all plant quantities.
- Adjust plantings in the field as necessary.
- Project is to be irrigated by an automatic, underground system, which will provide full coverage for all plant material. System is to be design/ build by Landscape Contractor. Guarantee system for a minimum one year. Show drip systems as alternate bid only.
- All plants are to be fully foliated, well branched and true to form.
- Contractor is to notify Landscape Architect or Owner's Representative of any site changes or unforeseen conditions that may be detrimental to plant health, or cause future problems to any structural elements of the project.
- Contractor shall notify the Landscape Architect if specified materials or methods are not consistent with local climate and/or practices.

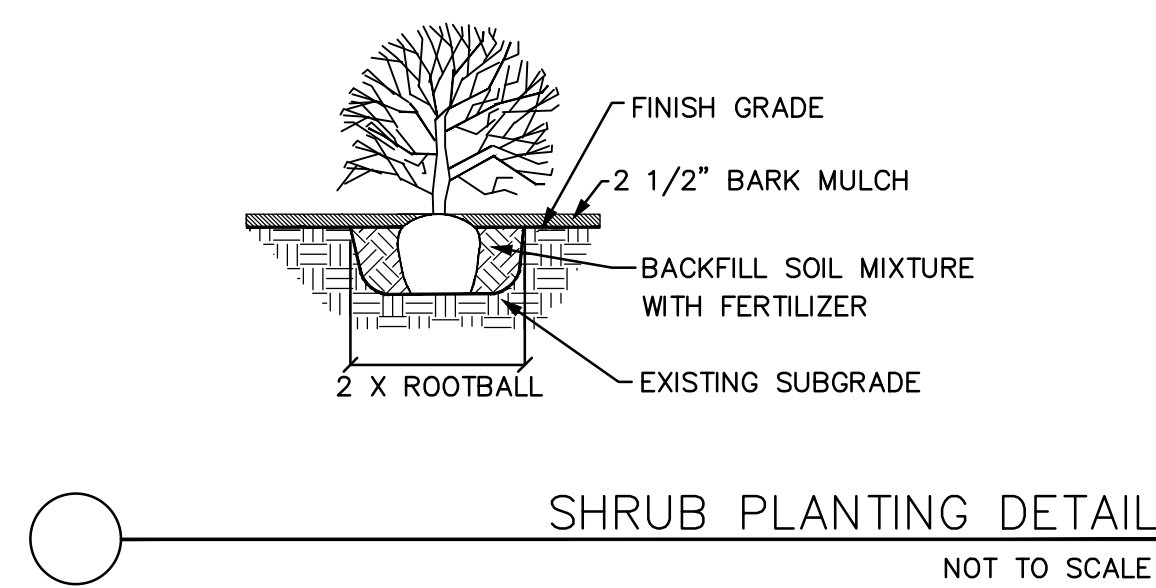
LANDSCAPE PLAN
SCALE 1" = 30'-0"



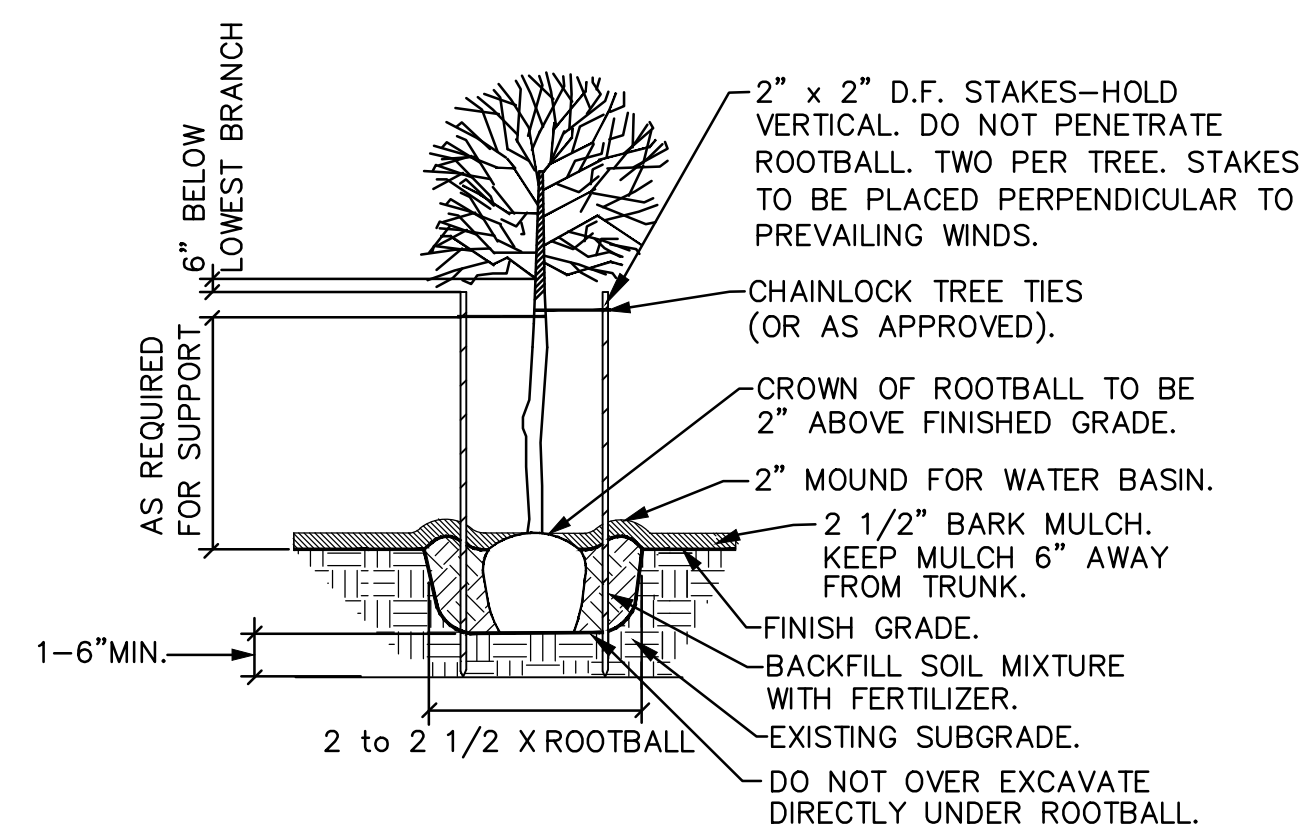
| | |
|--|-----------|
| REGISTERED L793 ERIN HOLSÖNBACK OREGON 610/0313 EXP. 5/31/20 LANDSCAPE ARCHITECT | |
| OTTEN & Associates, Landscape Architecture, LLC 3933 SW Kelly Avenue, Suite B • Portland, Oregon 97239 Phone: (503) 972-0311 • www.ottenla.com | |
| DATE | 12-9-2019 |
| SCALE | NOTED |
| DRAWN | CHECKED |
| MPL | EH |
| SHEET NO. | L1.0 |
| 1 OF 2 | |



EVERGREEN TREE STAKING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE



NOTE: ANY PROPOSED CHANGES TO OUR SPECIFICATION OR DETAIL SHOULD BE APPROVED BY THE LANDSCAPE ARCHITECT. LIKEWISE, IN ACCORDANCE WITH BEST PRACTICES OF LOCAL LANDSCAPE INSTALLATION, SHOULD THE LANDSCAPE CONTRACTOR FIND A PREFERRED ALTERNATE METHOD, THE LANDSCAPE ARCHITECT MAY BE SO ADVISED.

GENERAL DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

OUTLINE SPECIFICATIONS PLANTING:

GENERAL: All plants shall conform to all applicable standards of the latest edition of the "American Association of Nurserymen Standards", A.N.S.I. 260.1 - 1973. Meet or exceed the regulations and laws of Federal, State, and County regulations, regarding the inspection of plant materials, certified as free from hazardous insects, disease, and noxious weeds, and certified fit for sale in Oregon.

The apparent silence of the Specifications and Plans as to any detail, or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of first quality are to be used. All interpretations of these Specifications shall be made upon the basis above stated.

Landscape contractor shall perform a site visit prior to bidding to view existing conditions.

PERFORMANCE QUALITY ASSURANCE: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary horticultural practices and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

NOTIFICATION: Give Landscape Architect minimum of 2 days advance notice of times for inspections. Inspections at growing site does not preclude Landscape Architect's right of rejection of deficient materials at project site. Each plant failing to meet the above mentioned "Standards" or otherwise failing to meet the specified requirements as set forth shall be rejected and removed immediately from the premises by the Contractor and at his expense, and replaced with satisfactory plants or trees conforming to the specified requirements.

SUBSTITUTIONS: Only as approved by the Landscape Architect or the Owner's Representative.

GUARANTEE AND REPLACEMENT: All plant material shall be guaranteed from final acceptance for one full growing season or one year, whichever is longer. During this period the Contractor shall replace any plant material that is not in good condition and producing new growth (except that material damaged by severe weather conditions, due to Owner's negligence, normally unforeseen peculiarities of the planting site, or lost due to vandalism). Guarantee to replace, at no cost to Owner, unacceptable plant materials with plants of same variety, age, size and quality as plant originally specified. Conditions of guarantee on replacement plant shall be same as for original plant.

Landscape Contractor shall keep on site for Owner's Representative's inspection, all receipts for soil amendment and topsoil deliveries.

PROTECTION: Protect existing roads, sidewalks, and curbs, landscaping, and other features remaining as final work. Verify location of underground utilities prior to doing work. Repair and make good any damage to service lines, existing features, etc. caused by landscaping installation.

PLANT QUALITY ASSURANCE: Deliver direct from nursery. Maintain and protect roots of plant material from drying or other possible injury. Store plants in shade and protect them from weather immediately upon delivery, if not to be planted within four hours.

Nursery stock shall be healthy, well branched and rooted, formed true to variety and species, full foliated, free of disease, injury, defects, insects, weeds, and weed roots. Trees shall have straight trunks, symmetrical tips, and have an intact single leader. Any trees with double leaders will be rejected upon inspection. All Plants: True to name, with one of each bundle or lot tagged with the common and botanical name and size of the plants in accordance with standards of practice of the American Association of Nurserymen, and shall conform to the Standardized Plant Names, 1942 Edition.

Container grown stock: Small container-grown plants, furnished in removable containers, shall be well rooted to ensure healthy growth. **Grow container plants in containers a minimum of one year** prior to delivery, with roots filling container but not root bound. Bare root stock: Roots well-branched and fibrous. Baled and burlapped (B&B): Ball shall be of natural size to ensure healthy growth. Ball shall be firm and the burlap sound. No loose or made ball will be acceptable.

TOPSOIL AND FINAL GRADES: Landscape Contractor is to supply and place 12" of topsoil in planting beds. Landscape Contractor is to verify with the General Contractor if the on-site topsoil is or is not conducive to proper plant growth. The topsoil shall be a sandy loam, free of all weeds and debris inimical to lawn or plant growth. Furnish soil analysis by a qualified soil testing laboratory stating percentages of organic matter; gradation of sand, silt and clay content; cation exchange capacity; deleterious material; pH; and plant nutrient content of the topsoil. Report suitability of topsoil for plant growth and recommended quantities of nitrogen, phosphorus and potash nutrients and soil amendments (including compost) to be added to produce satisfactory topsoil. If stockpiled topsoil on site is not conducive to proper plant growth, the Landscape Contractor shall import the required amount.

Landscaping shall include finished grades and even distribution of topsoil to meet planting requirements. Grades and slopes shall be as indicated. Planting bed grades shall be approximately 3" below adjacent walks, paving, finished grade lines, etc., to allow for bark application. Finish grading shall remove all depressions or low areas to provide positive drainage throughout the area.

PLANTING SPECIFICATIONS:

HERBICIDES: Prior to soil preparation, all areas showing any undesirable weed or grass growth shall be treated with Round-up in strict accordance with the manufacturer's instructions.

SOIL PREPARATION: Work all areas by rototilling to a minimum depth of 8". Remove all stones (over 1 1/2" size), sticks, mortar, large clumps of vegetation, roots, debris, or extraneous matter turned up in working. Soil shall be of a homogeneous fine texture. Level, smooth and lightly compact area to plus or minus .10 of required grades.

In groundcover areas add 2" of compost (or as approved) and till in to the top 6" of soil.

PLANTING HOLE: Lay out all plant locations and excavate all soils from planting holes to 2 1/2 times the root ball or root system width. Loosen soil inside bottom of plant hole. Dispose of any "subsoil" or debris from excavation. Check drainage of planting hole with water, and adjust any area showing drainage problems.

SOIL MIX: Prepare soil mix in each planting hole by mixing:
2 part native topsoil (no subsoil)
1 part compost (as approved)

Thoroughly mix in planting hole and add fertilizers at the following rates:

- Small shrubs - 1/8 lb./ plant
- Shrubs - 1/3 to 1/2 lb./ plant
- Trees - 1/3 to 1 lb./ plant

FERTILIZER: For trees and shrubs use Commercial Fertilizer "A" Inorganic (5-4-3) with micro-nutrients and 50% slow releasing nitrogen.

PLANTING TREES AND SHRUBS: Plant upright and face to give best appearance or relationship to adjacent plants and structures. Place 6" minimum, lightly compacted layer of prepared planting soil under root system. Loosen and remove twine binding and burlap from top 1/2 of root balls. Cut off cleanly all broken or frayed roots, and spread roots out. Stagger Plants in rows. Backfill planting hole with soil mix while working each layer to eliminate voids.

When approximately 2/3 full, water thoroughly, then allow water to soak away. Place remaining backfill and dish surface around plant to hold water. Final grade should keep root ball slightly above surrounding grade, not to exceed 1". Water again until no more water is absorbed. Initial watering by irrigation system is not allowed.

STAKING OF TREES: Stake or guy all trees. Stakes shall be 2" X 2" (nom.) quality tree stakes with point. They shall be of Douglas Fir, clear and sturdy. Stake to be minimum 2/3 the height of the tree, not to exceed 8'-0". Drive stake firmly 1'-6" below the planting hole. Tree ties for deciduous trees shall be "Chainlock" (or better). For Evergreen trees use "Gro-Strait" Tree Ties (or a reinforced rubber hose and guy wires) with guy wires of a minimum 2 strand twisted 12 ga. wire. Staking and guying shall be loose enough to allow movement of tree while holding tree upright.

MULCHING OF PLANTINGS: Mulch planting areas with dark, aged, medium grind fir or hemlock bark (aged at least 6 months) to a depth of 2" in ground cover areas and 2 1/2" in shrub beds. Apply evenly, not higher than grade of plant as it came from the nursery, and rake to a smooth finish. Water thoroughly, then hose down planting area with fine spray to wash leaves of plants.

GENERAL MAINTENANCE: Protect and maintain work described in these specifications against all defects of materials and workmanship, through final acceptance. Replace plants not in normal healthy condition at the end of this period. Water, weed, cultivate, mulch, reset plants to proper grade or upright position, remove dead wood and do necessary standard maintenance operations. Irrigate when necessary to avoid drying out of plant materials, and to promote healthy growth.

CLEAN-UP: At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.

| NO. | DATE | REVISIONS |
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HEDGES D

SW 115TH STREET
TUALATIN, OREGON

LANDSCAPE DETAILS & SPECS

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| DATE | 12-9-2019 |
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