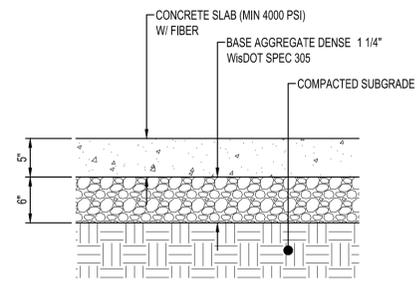
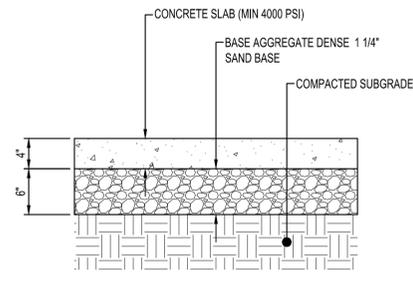


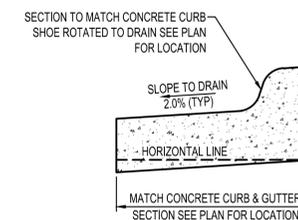
**STANDARD 5"
CONCRETE PAVEMENT**
NTS ST120



**STANDARD 6"
CONCRETE PAVEMENT**
NTS ST130



CONCRETE SIDEWALK
NTS ST160



**REVERSE PITCH
CONCRETE CURB & GUTTER**
NTS ST250

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PROJECT

**RED CLOUD
DEVELOPMENT**

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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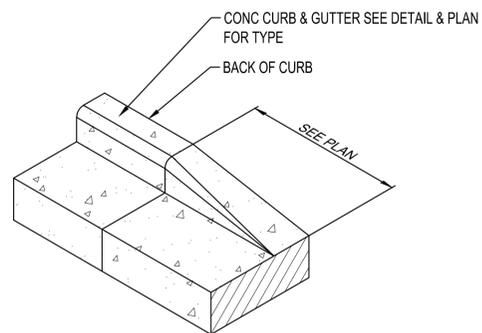
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| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 CO-DETAILS |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

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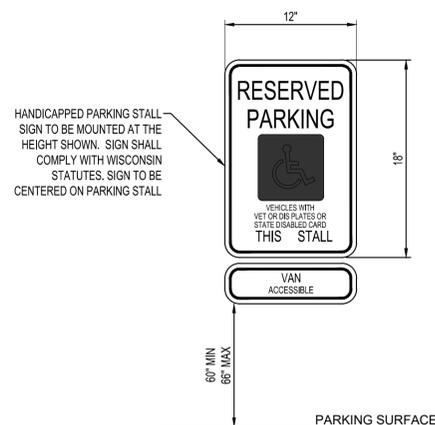
SITE DETAILS

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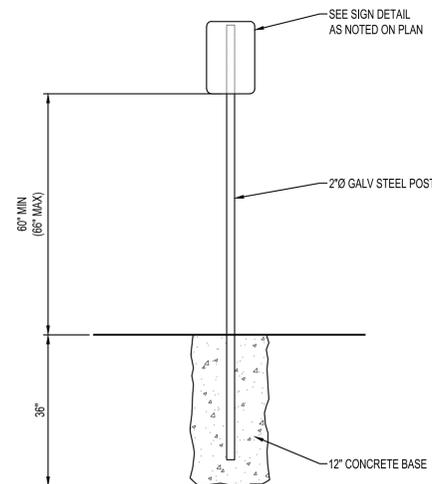
CURB TAPER
NTS ST270



ACCESSIBLE PARKING SIGN
NTS PM100

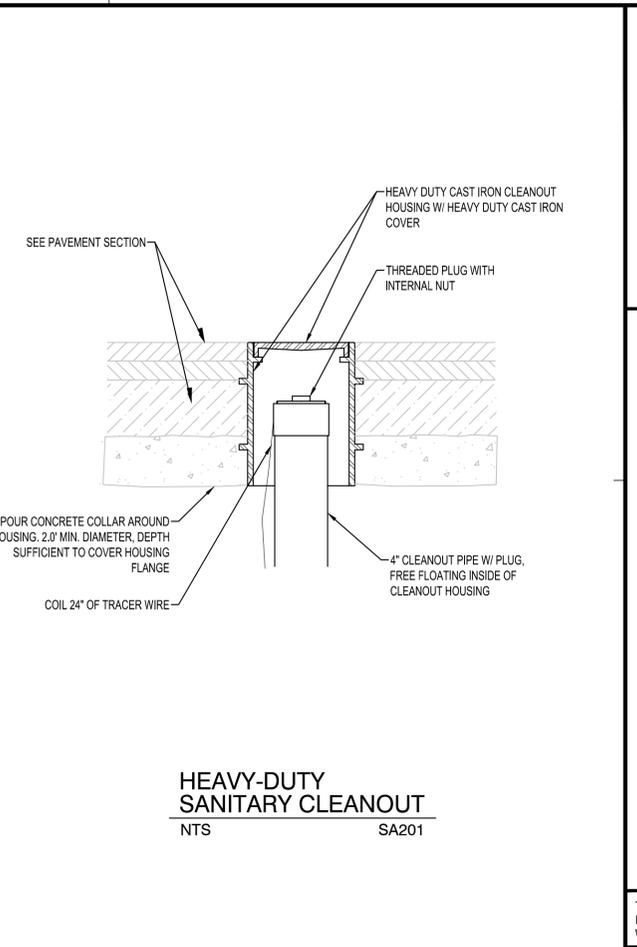
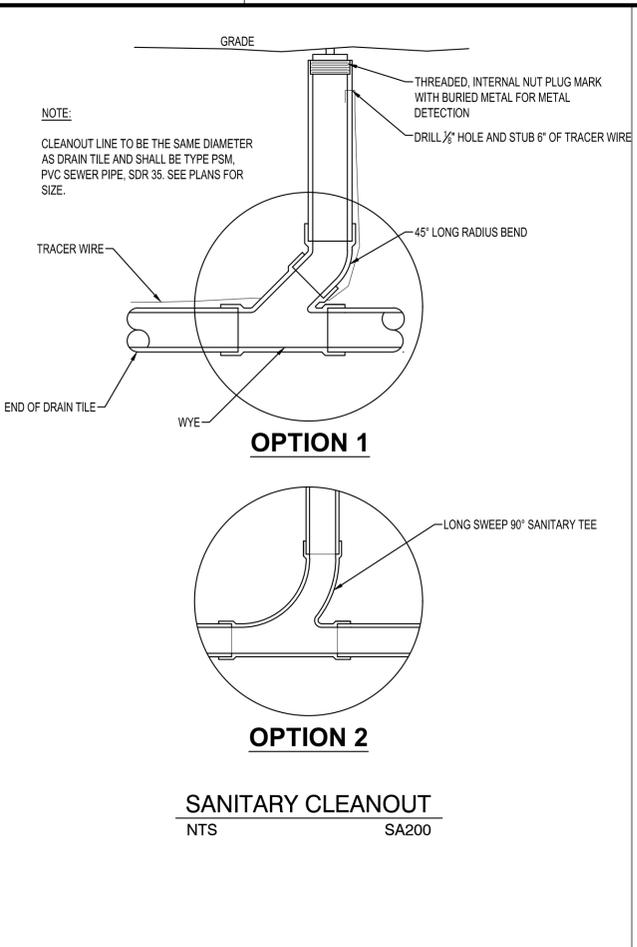
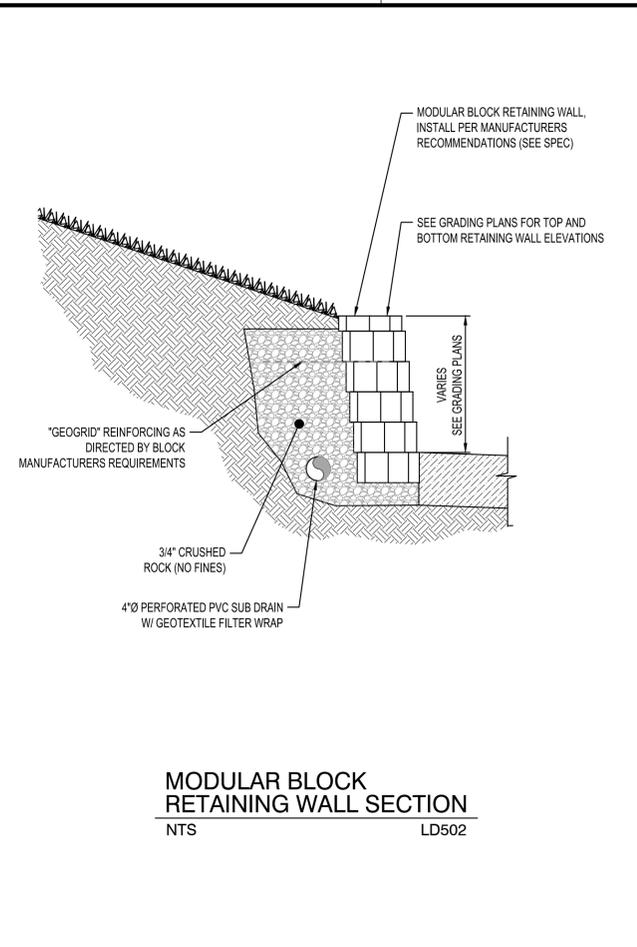
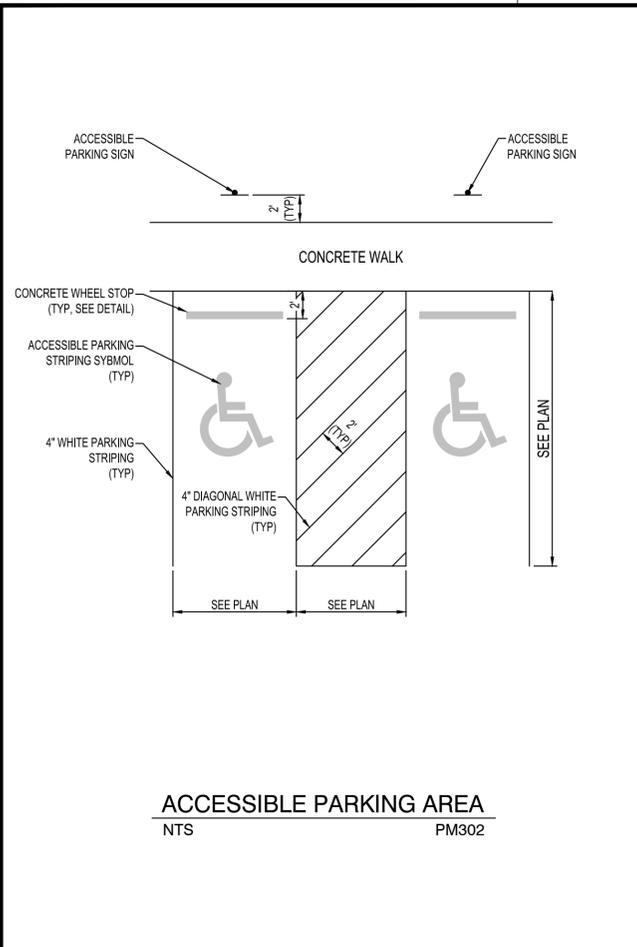


NO PARKING SIGN
NTS PM110

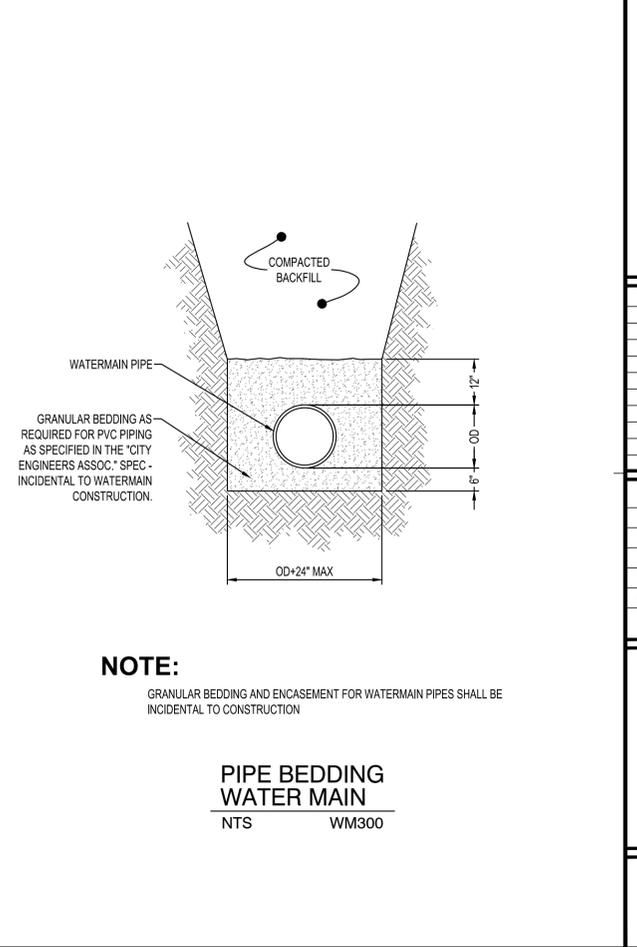
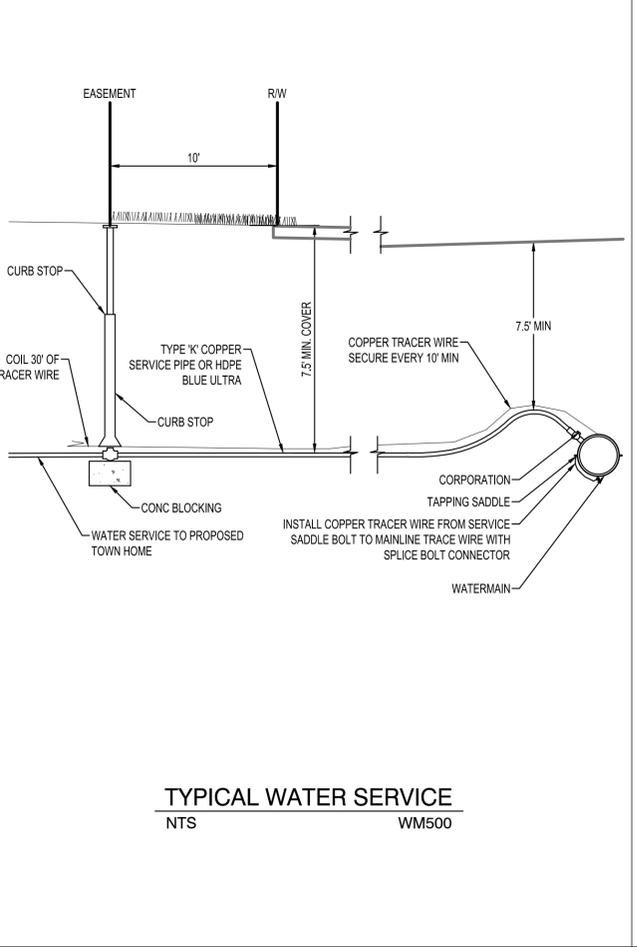
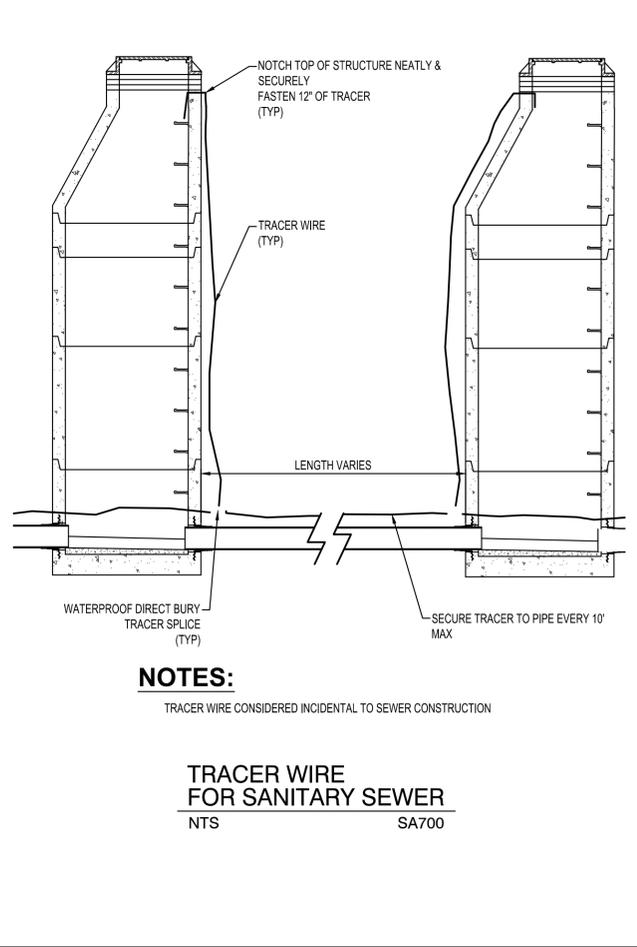
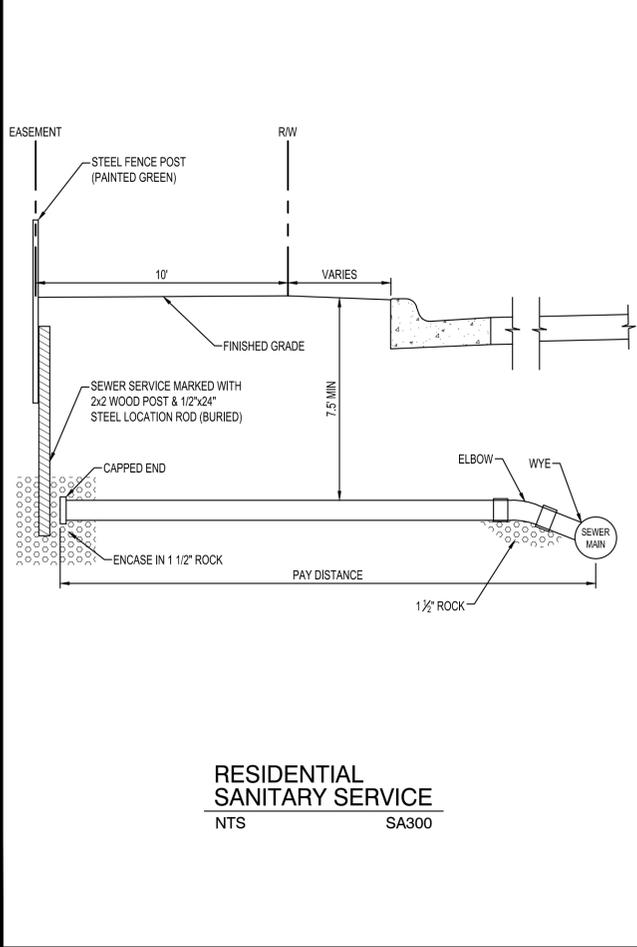


**TYPICAL
SIGN POST**
NTS PM200

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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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PROJECT NO. 20-24403

FILE NAME 24403 CO-DETAILS

DRAWN BY CLF, SMD

DESIGNED BY KBR

REVIEWED BY KBR

ORIGINAL ISSUE DATE ---

CLIENT PROJECT NO. -

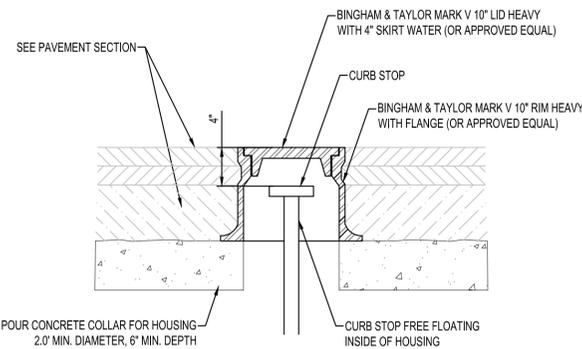
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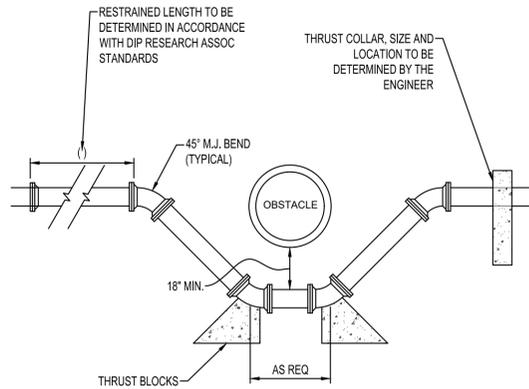
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PRELIMINARY NOT FOR CONSTRUCTION

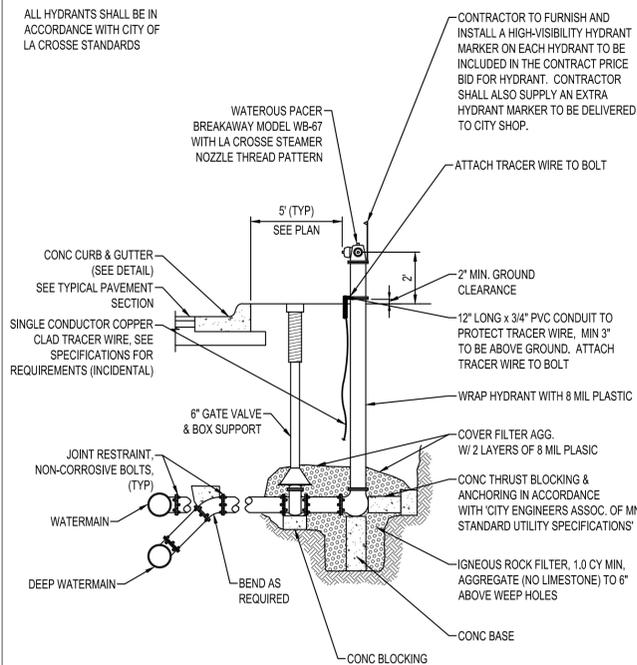


HEAVY-DUTY CURB STOP HOUSING
NTS WM550

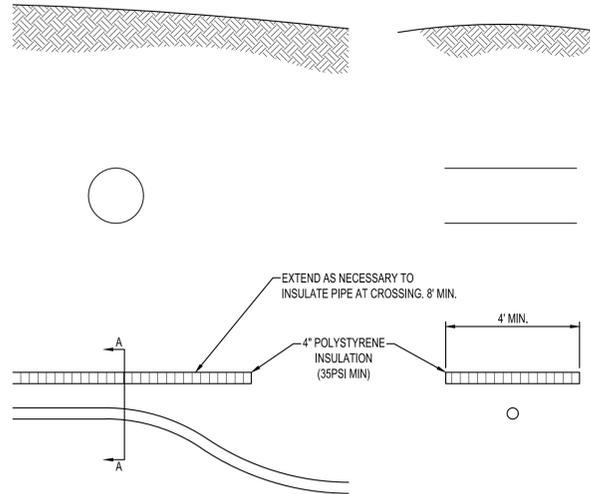


NOTES:
FITTINGS SHALL BE RESTRAINED WITH THE USE OF APPROVED MECHANICAL JOINT RESTRAINING GLANDS

WATERMAIN CONSTRUCTION AROUND OBSTACLES
NTS WM600

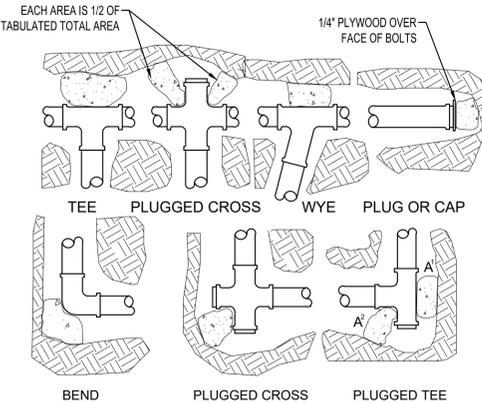


TYPICAL HYDRANT INSTALLATION
NTS WM100



WATER PIPE INSULATION
NTS WM400

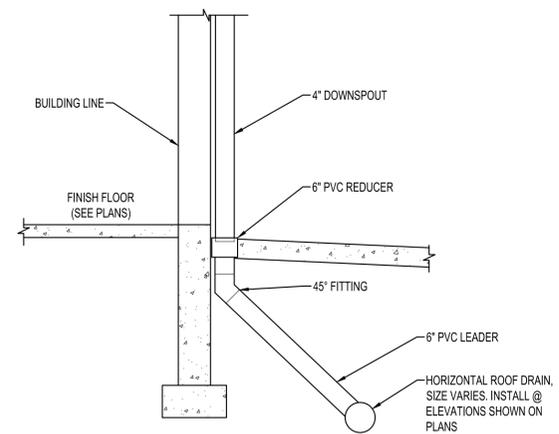
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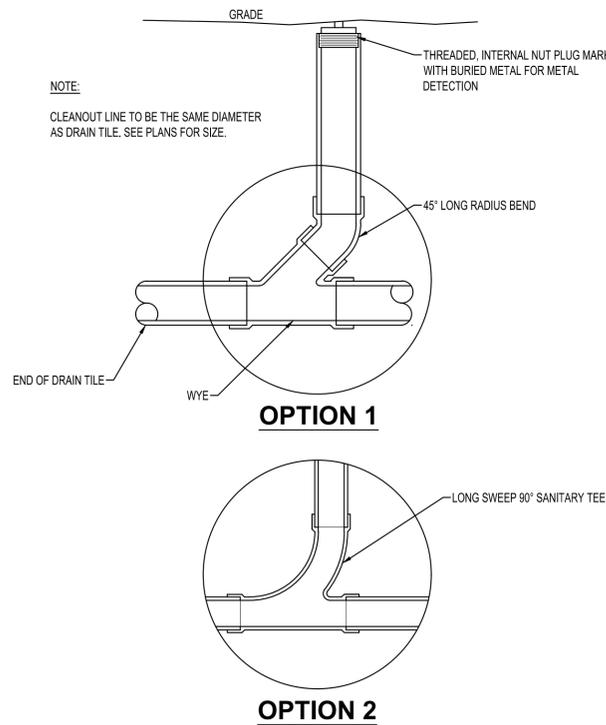
WATERMAIN THRUST BLOCKING
NTS WM700

| NOMINAL FITTING SIZE INCHES | TEE, WYE PLUG OR CAP | 90 BEND PLUGGED CROSS | TEE PLUGGED ON RUN | | 45° BEND | 22 1/2° BEND | 11 1/4° BEND |
|-----------------------------|----------------------|-----------------------|--------------------|----------------|----------|--------------|--------------|
| | | | A ¹ | A ² | | | |
| 4 | 1.0 | 1.4 | 1.9 | 1.4 | 1.0 | | |
| 6 | 2.1 | 3.0 | 4.3 | 3.0 | 1.6 | 1.0 | |
| 8 | 3.8 | 5.3 | 7.6 | 5.4 | 2.9 | 1.5 | 1.0 |
| 10 | 5.9 | 8.4 | 11.8 | 8.4 | 4.6 | 2.6 | 1.2 |
| 12 | 8.5 | 12.0 | 17.0 | 12.0 | 6.6 | 3.4 | 1.7 |
| 14 | 11.5 | 16.3 | 23.0 | 16.3 | 8.9 | 4.6 | 2.3 |
| 16 | 15.0 | 21.3 | 30.0 | 21.3 | 11.6 | 6.0 | 3.0 |
| 18 | 19.0 | 27.0 | 38.0 | 27.0 | 14.6 | 7.6 | 3.8 |
| 20 | 23.5 | 33.3 | 47.0 | 33.3 | 18.1 | 9.4 | 4.7 |
| 24 | 34.0 | 48.0 | 68.0 | 48.0 | 26.2 | 13.6 | 6.8 |

- NOTES**
- CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH
 - KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES
 - IF NOT SHOWN ON PLANS, REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED ABOVE, ADJUST IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS (ES)
 - BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL
 - ABOVE BEARING AREAS BASE ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS PER SQ.FT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING USE THE FOLLOWING EQUATION: BEARING AREA=TEST PRESSURE/150x(2000/SOIL BEARING STRESS x TABLE VALUE



VERTICAL RAIN LEADER
NTS SD400



STORM CLEANOUT
NTS SD250

PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| DATE | DESCRIPTION | BY |
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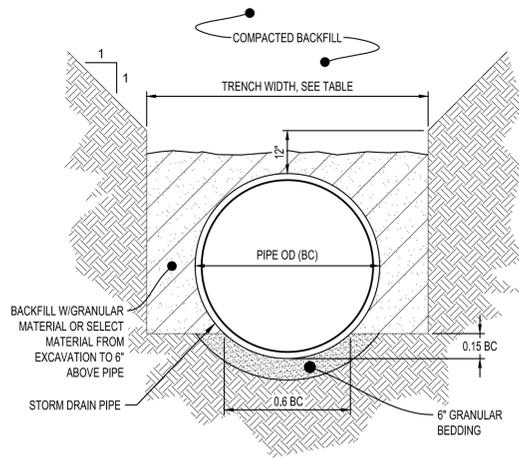
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| CLIENT PROJECT NO. | - |

TITLE

SITE DETAILS

SHEET

PRELIMINARY NOT FOR CONSTRUCTION

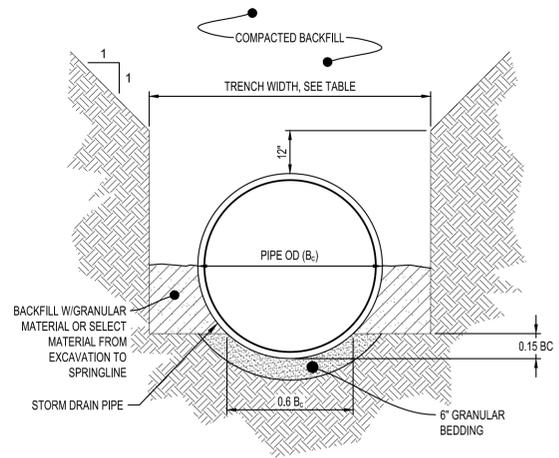


TRENCH WIDTH

| PIPE Ø | TRENCH WIDTH |
|-------------|--------------|
| 36" OR LESS | BC + 24" |
| 42" TO 54" | 1.5 x BC |
| 60" OR OVER | BC + 36" |

NOTES:
 GRANULAR BEDDING AND BACKFILL FOR STORM DRAIN PIPES SHALL BE INCIDENTAL TO STORM DRAIN CONSTRUCTION

NON-CONCRETE STORM DRAIN PIPE BEDDING
 NTS SD600

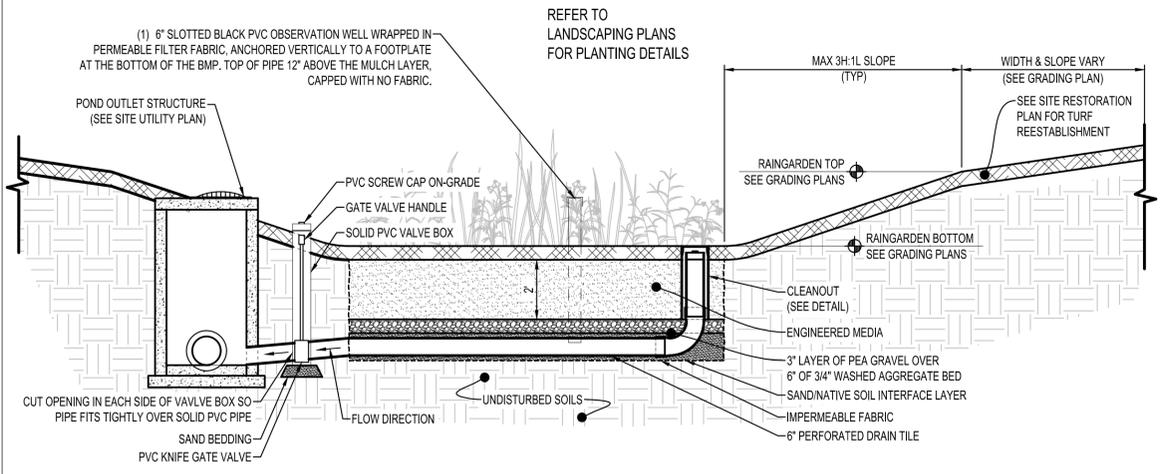


TRENCH WIDTH

| PIPE Ø | TRENCH WIDTH |
|-------------|----------------------|
| 36" OR LESS | B _c + 24" |
| 42" TO 54" | 1.5 x B _c |
| 60" OR OVER | B _c + 36" |

NOTES:
 GRANULAR BEDDING AND BACKFILL FOR STORM DRAIN PIPES SHALL BE INCIDENTAL TO STORM DRAIN CONSTRUCTION

REINFORCED CONCRETE STORM DRAIN PIPE BEDDING
 NTS SD601



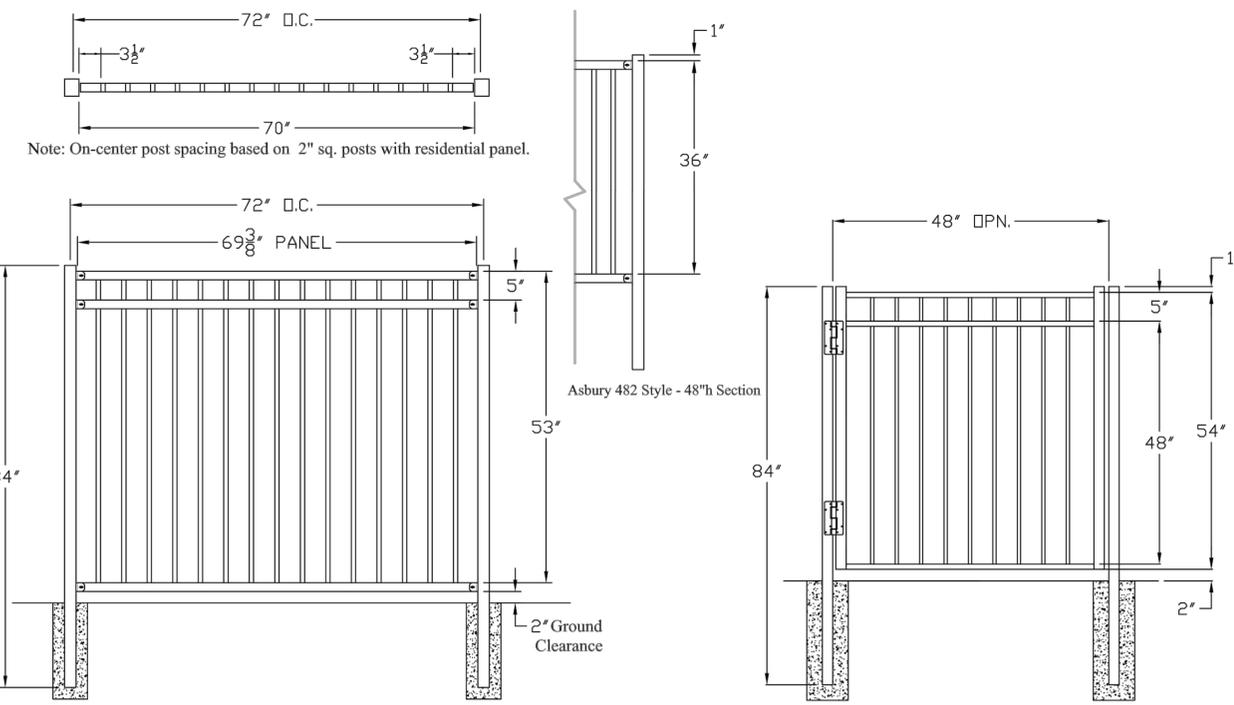
- ENGINEERED MEDIA COMPOSITION:**
- 60% SILICA SAND - USDA COARSE SAND, (0.02 TO 0.04") PRE-WASHED TO REMOVE CLAY AND SILT PARTICLES AND WELL-DRAINED OR DRY PRIOR TO MIXING.
 - 20% COMPOST - SHALL MEET DNR SPECIFICATION S100, COMPOST.
 - 20% TOPSOIL.
 - ENGINEERED SOIL MIX SHALL BE FREE OF ROCKS, STUMPS, ROOTS, BRUSH, OR OTHER MATERIAL OVER 1" DIA. NO OTHER MATERIALS SHALL BE MIXED WITH THE PLANTING SOIL THAT MAY BE HARMFUL TO THE PLANT GROWTH OR PROVE A HINDRANCE TO PLANTING OR MAINTENANCE.

- NOTES:**
- BIO-FILTRATION BASIN SHALL BE STAKED OFF AND MARKED TO KEEP ALL CONSTRUCTION TRAFFIC, EQUIPMENT, AND MATERIAL STOCK PILES OUT OF THE PROPOSED AREA.
 - CONTRACTOR SHALL ENSURE THAT THE BIO-FILTRATION BASIN IS NOT USED AS A SEDIMENT TRAP DURING CONSTRUCTION AND THAT NO RUNOFF ENTERS BIO-INFILTRATION BASIN PRIOR TO THE COMPLETION OF CONSTRUCTION AND COMPLETE STABILIZATION OF SURROUNDING AREAS. ALL UPLAND DRAINAGE MUST BE DIVERTED TO PREVENT RUNOFF FROM ENTERING BIO-FILTRATION BASIN AREA.
 - BIO-FILTRATION BASIN SHALL BE CONSTRUCTED AT END OF PROJECT AFTER ALL AREAS SURROUNDING IT AND DRAINING INTO IT HAVE BEEN CONSTRUCTED AND FULLY STABILIZED. NO EQUIPMENT SHALL BE DRIVEN IN THE AREA OF THE BIO-INFILTRATION BASIN PRIOR TO ITS CONSTRUCTION AND ONLY LIGHT EARTH MOVING EQUIPMENT WITH TRACKS SHALL BE USED.
 - IMMEDIATELY FOLLOWING BIO-FILTRATION BASIN CONSTRUCTION, THE ENTIRE BIO-FILTRATION BASIN SHALL BE SEEDED AND STABILIZED AS INDICATED IN THE CONTRACT DOCUMENTS. BIO-FILTRATION BASIN MUST BE FULLY STABILIZED PRIOR TO ANY UPSTREAM RUNOFF BEING DIRECTED TO THE BASIN.

TYP. MAINTENANCE ACTIVITIES FOR BIORETENTION AREAS

| ACTIVITY | FREQUENCY |
|---------------------------------------|--|
| WATER PLANTS | AS NECESSARY DURING FIRST GROWING SEASON |
| WATER AS NECESSARY DURING DRY PERIODS | AS NEEDED AFTER FIRST GROWING SEASON |
| RE-MULCH VOID AREAS | AS NEEDED |
| TREAT DISEASED TREES AND SHRUBS | AS NEEDED |
| INSPECT SOIL AND REPAIR ERODED AREAS | MONTHLY |
| REMOVE LITTER AND DEBRIS | MONTHLY |
| ADD ADDITIONAL MULCH | ONCE PER YEAR |

BIO-FILTRATION BASIN
 NTS SD750



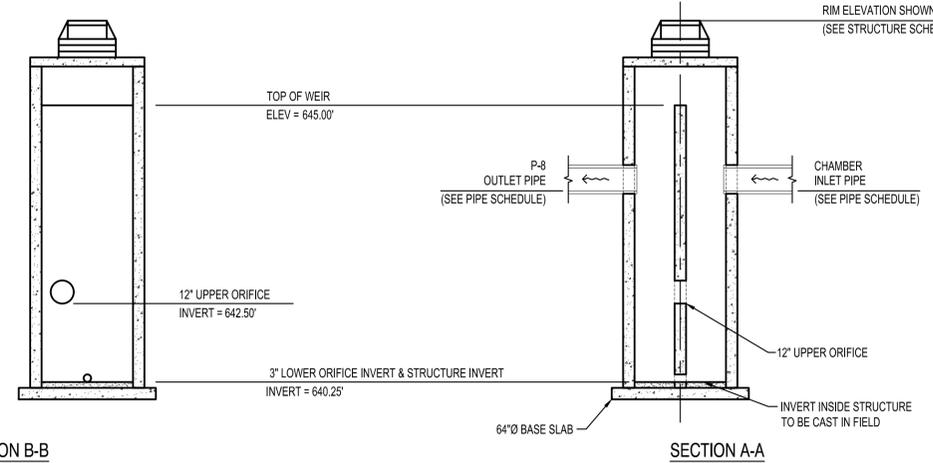
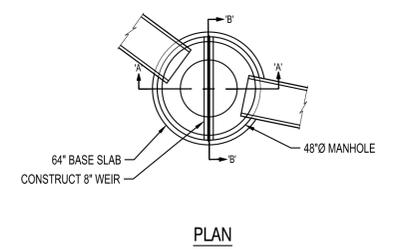
Shown (Asbury 543 Style - 54" h Section) Post spacing does not change between styles.

AUSBURY 482 STYLE EZ ALUMINUM FENCE
 NTS

48" GATE

NOTES:

- GRIND EXPOSED FIELD & SHOP WELDS FLUSH WITH ADJACENT SURFACES.
- AFTER FABRICATION, GALVANIZE STRUCTURAL SHAPES AND MISCELLANEOUS ITEMS IN ACCORDANCE WITH ASTM A123.
- REPAIR DAMAGED & SCRATCHED GALVANIZED COATINGS AFTER INSTALLATION
- GROUT AROUND ALL PIPES ON INSIDE AND OUTSIDE OF MANHOLE



ADS CHAMBER OUTLET STRUCTURE
 NTS

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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

REVISION SCHEDULE

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| PROJECT NO. | 20-24403 |
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| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
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| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

TITLE

SITE DETAILS

SHEET

C0-13

PRELIMINARY NOT FOR CONSTRUCTION



MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 48/76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPED FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRPD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN², AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.85 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRPD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

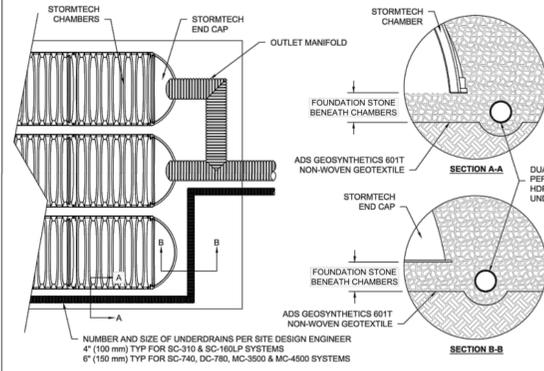
- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONE/HOOPER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELLED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "EXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

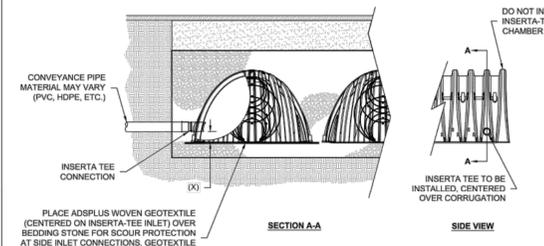
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-802-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

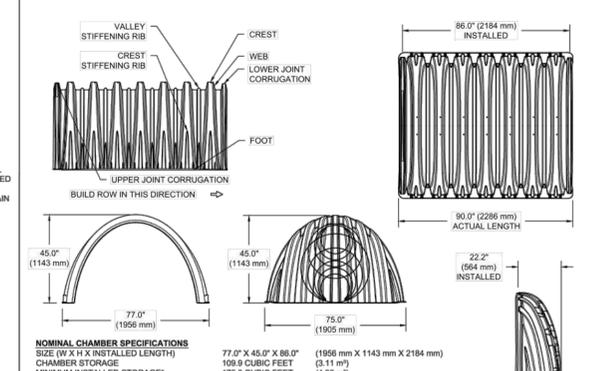


5 UNDERDRAIN DETAIL



| CHAMBER | MAX DIAMETER OF INSERTA TEE | HEIGHT FROM BASE OF CHAMBER (A) |
|---------|-----------------------------|---------------------------------|
| SC-310 | 6" (150 mm) | 4" (100 mm) |
| SC-740 | 10" (250 mm) | 4" (100 mm) |
| DC-780 | 10" (250 mm) | 4" (100 mm) |
| MC-3500 | 12" (300 mm) | 6" (150 mm) |
| MC-4500 | 12" (300 mm) | 6" (150 mm) |

NOTE: PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.



2 MC-3500 TECHNICAL SPECIFICATIONS

| PART # | STUB | B | C |
|--------------|--------------|-----------------|---------------|
| MC3500EPP08B | 6" (150 mm) | 33.21" (844 mm) | 0.66" (17 mm) |
| MC3500EPP08T | 8" (200 mm) | 31.16" (791 mm) | --- |
| MC3500EPP08B | 10" (250 mm) | 29.04" (738 mm) | 0.61" (16 mm) |
| MC3500EPP10B | 10" (250 mm) | --- | 0.93" (24 mm) |
| MC3500EPP12T | 12" (300 mm) | 28.36" (720 mm) | 1.35" (34 mm) |
| MC3500EPP12B | 12" (300 mm) | 23.99" (604 mm) | --- |
| MC3500EPP15B | 15" (375 mm) | 20.03" (509 mm) | 1.50" (38 mm) |
| MC3500EPP18T | 18" (450 mm) | --- | 1.77" (45 mm) |
| MC3500EPP18B | 18" (450 mm) | 14.48" (368 mm) | --- |
| MC3500EPP24T | 24" (600 mm) | --- | 2.06" (52 mm) |
| MC3500EPP24B | 24" (600 mm) | --- | 2.75" (70 mm) |

NOTE: ALL DIMENSIONS ARE NOMINAL.

INSPECTION & MAINTENANCE

- INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
 - INSPECTION PORTS (IF PRESENT)
 - REMOVE LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - OPTIONAL: IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR PLUS ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
 - A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED.
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SLUMP AS REQUIRED
- REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS, RECORD OBSERVATIONS AND ACTIONS.
- INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

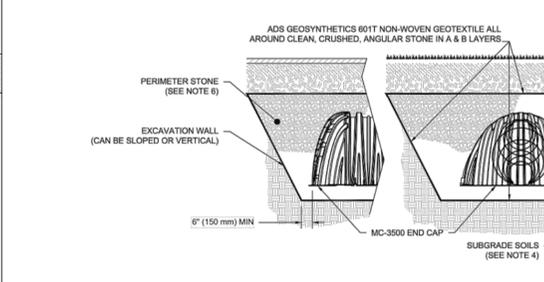
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

6 INSERTA-TEE SIDE INLET DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

| MATERIAL LOCATION | DESCRIPTION | AASHTO MATERIAL CLASSIFICATIONS | COMPACTION / DENSITY REQUIREMENT |
|-------------------|---|--|---|
| D | FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER. | N/A | PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS. |
| C | INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER. | AASHTO M44 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. |
| B | EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE. | AASHTO M43 ² 3, 4 | NO COMPACTION REQUIRED. |
| A | FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER. | AASHTO M43 ² 3, 4 | PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3} |

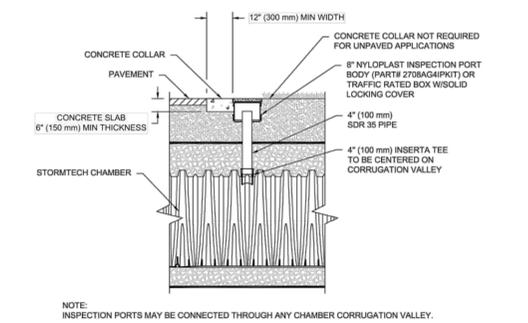
- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR A LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) MAX LIFTS USING TWO FULL COVERS WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 48/76 DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN², AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

3 MC-3500 ISOLATOR ROW PLUS DETAIL



4 4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)



7 MC-SERIES END CAP INSERTION DETAIL



1 MC-3500 CROSS SECTION DETAIL



DATE: _____ PROJECT NO.: _____ NOT TO SCALE

DRAWN: _____ REVIEWED: _____ REV: _____

STANDARD DETAILS

MC-3500

Stormtech

4640 TRUEMAN BLVD
HILLIARD, OH 43026

ADS

ADVANCED DRAINAGE SYSTEMS, INC.



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PROJECT

LA CROSSE WISCONSIN

REVISION SCHEDULE

| DATE | DESCRIPTION | BY |
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PROJECT NO. 20-24403

FILE NAME 24403 CO-DETAILS

DRAWN BY CLF, SMD

DESIGNED BY KBR

REVIEWED BY KBR

ORIGINAL ISSUE DATE ---

CLIENT PROJECT NO. -

TITLE

SITE DETAILS

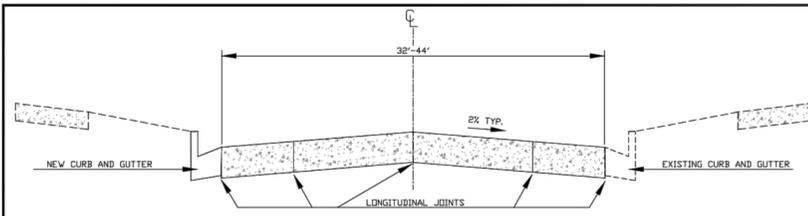
SHEET

SHEET

PRELIMINARY NOT FOR CONSTRUCTION

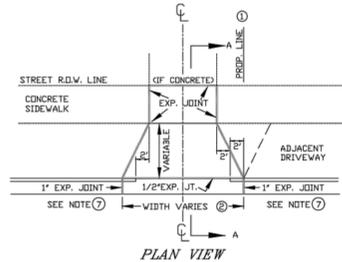


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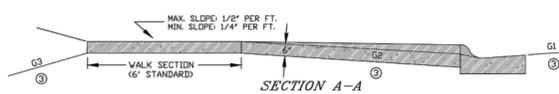


TYPICAL CROSS SECTION FOR 36' ROADWAY

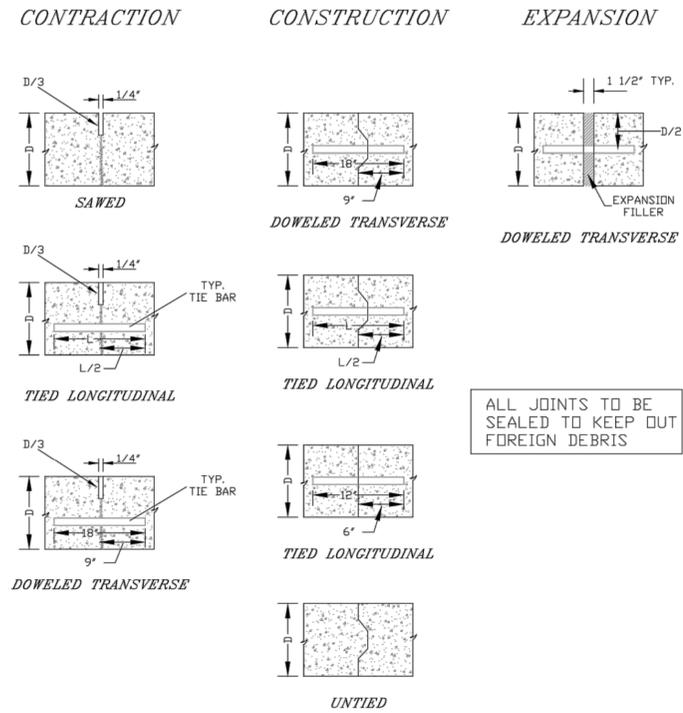
DRAWINGS NOT TO SCALE



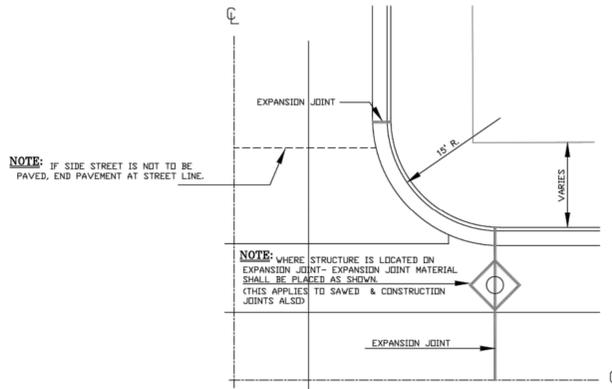
PLAN VIEW



SECTION A-A



ALL JOINTS TO BE SEALED TO KEEP OUT FOREIGN DEBRIS

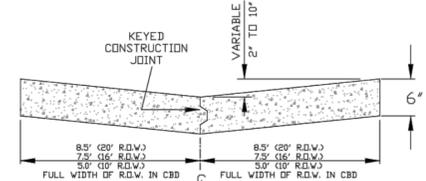


1/4 TYPICAL INTERSECTION

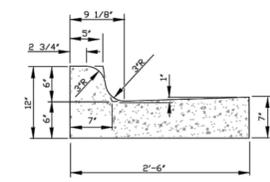
- NOTES-JOINTS
1. EXPANSION JOINTS SHALL BE PLACED AT THE END OF RADIUS AT STREET INTERSECTIONS AND MID-BLOCK BETWEEN INTERSECTIONS. IN NO CASE SHALL THE DISTANCE BETWEEN EXPANSION JOINTS EXCEED 160 FEET.
2. THE DISTANCE BETWEEN TRAVERSE JOINTS SHALL NOT BE LESS THAN 10 FEET AND SHALL BE TYPICALLY 20 FEET APART.
3. LONGITUDINAL CONSTRUCTION JOINTS BETWEEN CURB AND GUTTER SECTION AND CONC. PAVING SECTION SHALL BE SEALED AS SHOWN ON JOINT DETAILS.

- 1. DRIVE SECTION SHALL NOT OVERLAP PROPERTY LINE EXTENDED, EXCEPT WHERE PERMITTED BY THE ENGINEER, OR WHEN A JOINT DRIVEWAY AGREEMENT IS EXECUTED BY OWNERS OF ADJACENT PROPERTIES.
2. MAX. DRIVEWAY WIDTH AT THE CURB AND SIDEWALK IS SET FORTH IN CITY ORDINANCE 5.03.
3. THE BREAKOVER ANGLE (CAUSE OF CURB BITTING) BECOMES CRITICAL WHEN THE ALGEBRAIC DIFFERENCE OF GRADES (G1, G2, & G3) EXCEEDS 11%.
4. A REINFORCED DRIVE SECTION IS REQUIRED FOR CURB & GUTTER IN AREAS ZONED INDUSTRIAL OR COMMERCIAL.
5. BACK OF CURB TO FRONT OF CONC. SIDEWALK MUST BE CONCRETE, BRICK OR ASPHALTIC BITUMINUS.
6. MECHANICAL COMPACTION OF SUBSOIL IN LAYERS LESS THAN 12" TO ACHIEVE MINIMUM COMPACTION OF 95% OF MAXIMUM DENSITY FROM MODIFIED PROCTOR IS REQUIRED. (INCLUDING STREET SIDE AFTER FORMS ARE REMOVED).
7. EXPANSION JOINT IS REQUIRED AT BOTH ENDS OF DRIVEWAY WHEN ONLY DRIVEWAY IS INSTALLED OR REPLACED. WHEN ENTIRE BLOCK OF CURB & GUTTER IS INSTALLED THE EXPANSION JOINT AT DRIVEWAY ENDS MAY BE OMITTED.
NOTE: TURNING OF 2" DIAMETER DRIVEWAY RETURNS IN LIEU OF DIMINISHING HEAD AS SHOWN IS PERMITTED IF DESIRED BY PROPERTY OWNER. INSTALLATION OF A DRIVEWAY BY REMOVING EXISTING CURB HEAD ONLY IS NOT ALLOWED. ENTIRE EXISTING C&G MUST BE REMOVED FOR NEW DRIVEWAYS. REMOVAL OF A MINIMUM 12" WIDTH OF BITUMINUS TO INSTALL FRONT FORMS IS REQUIRED.

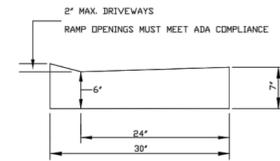
STANDARD DRIVEWAY DETAIL



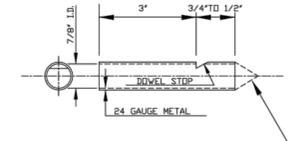
TYPICAL SECTION OF ALLEY PAVEMENT



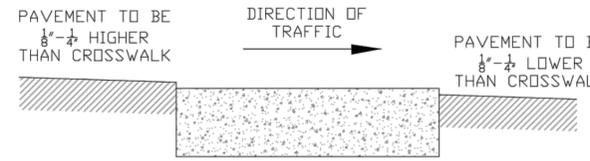
STANDARD CURB & GUTTER SECTION



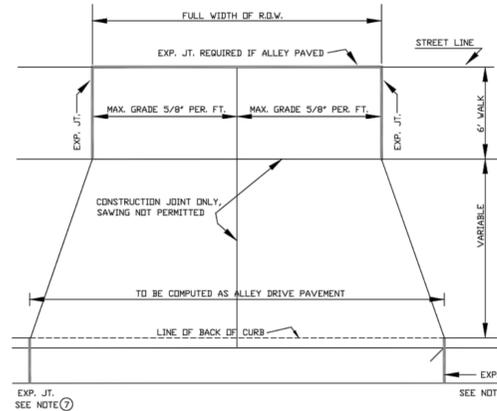
MOUNTABLE CURB SECTION



DOWEL SOCKET DETAIL

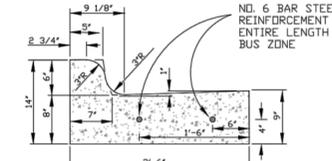


CONCRETE CROSSWALK DETAIL

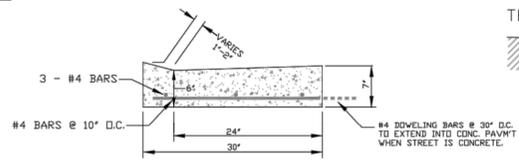


STANDARD ALLEY DRIVEWAY 7" THICK

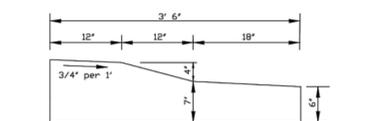
NOTE: WITH REFERENCE TO SAVING OF CONTRACTION JOINTS ON SLIP FORM CURB & GUTTER, & CURB, PAGE 9.3, STANDARD SPEC'S THE SAW CUT SHALL BE A MINIMUM 1/8" WIDE X 1" DEEP.



REINFORCED CURB & GUTTER BUS STOP LOCATIONS



REINFORCED DRIVEWAY



TRAFFIC CIRCLE CURB SECTION

Table with project details: PROJECT No. 20-24403, CONCRETE-PAVEMENT DETAILS, ENGINEERING DEPT. City of LaCrosse, Wis., and revision schedule.

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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

Table with revision schedule columns: DATE, DESCRIPTION, BY.

Table with project details: PROJECT NO. 20-24403, FILE NAME 24403 CO-DETAILS, DRAWN BY CLF, SMD, DESIGNED BY KBR, REVIEWED BY KBR, ORIGINAL ISSUE DATE ---, CLIENT PROJECT NO. -

TITLE

SITE DETAILS

SHEET

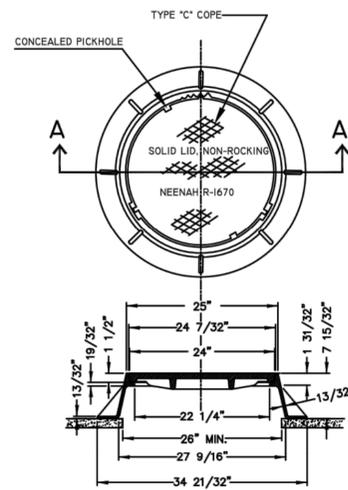


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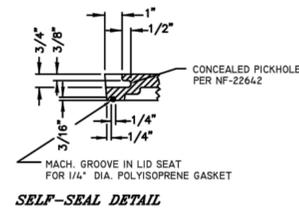
SEWER PIPE JOINT MATERIALS

CONCRETE PIPE-RUBBER GASKET (ASTM C-443)
PVC PIPE- ELASTOMETRIC GASKET (ASTM D-3212 & F-477)



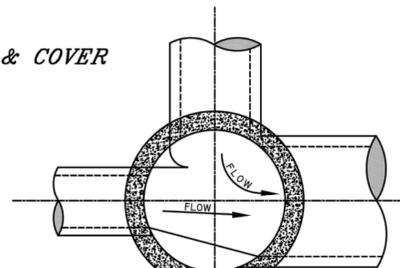
DETAIL OF MANHOLE FRAME & COVER

(MINIMUM WEIGHT 324 LBS. TOTAL)
NEENAH R-1670 OR EQUAL

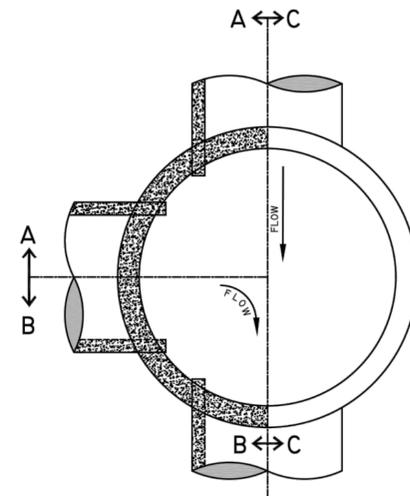


SELF-SEAL DETAIL

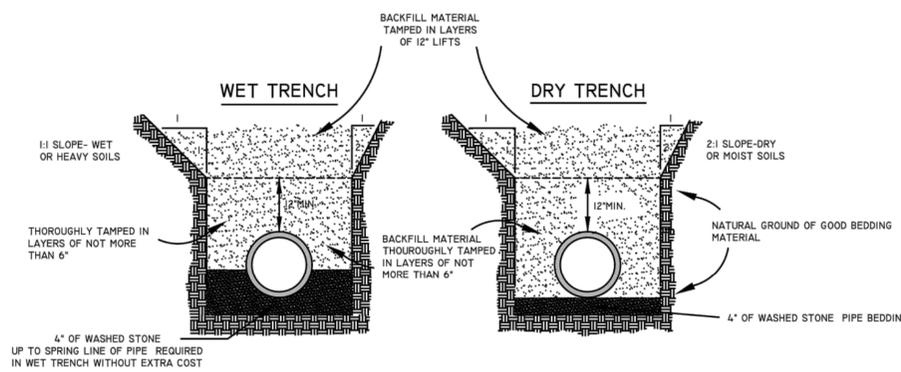
NOTE
OPENING FOR FRAME & COVER SHALL BE CENTERED ON MANHOLES WITH FLAT TOPS.



D-6

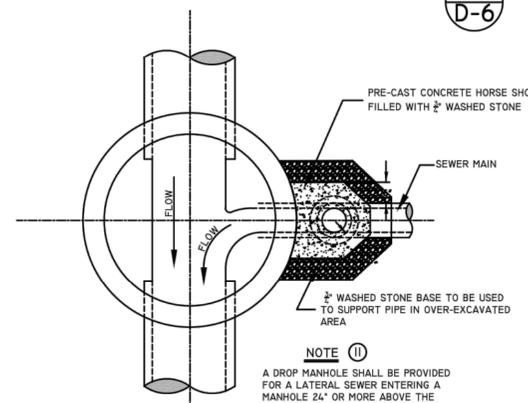


D-6

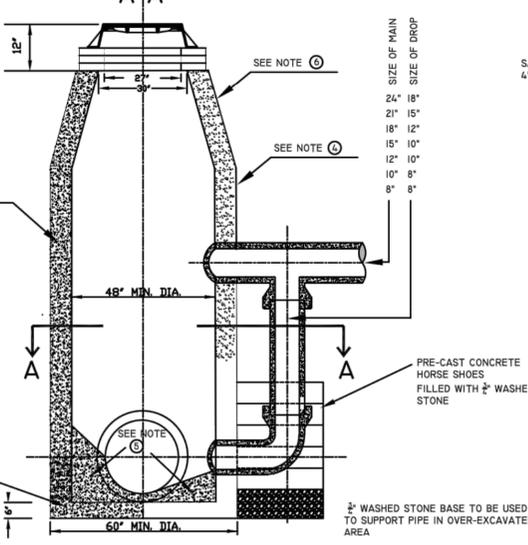


DETAILS OF SEWER TRENCHES

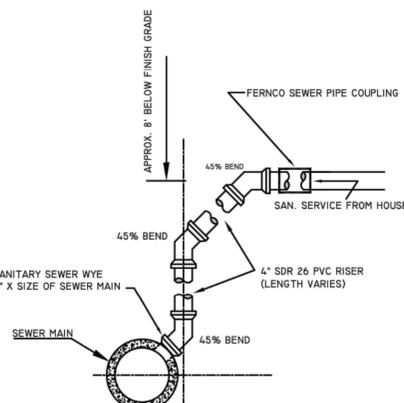
D-6



NOTE 11
A DROP MANHOLE SHALL BE PROVIDED FOR A LATERAL SEWER ENTERING A MANHOLE 24" OR MORE ABOVE THE MANHOLE INVERT.

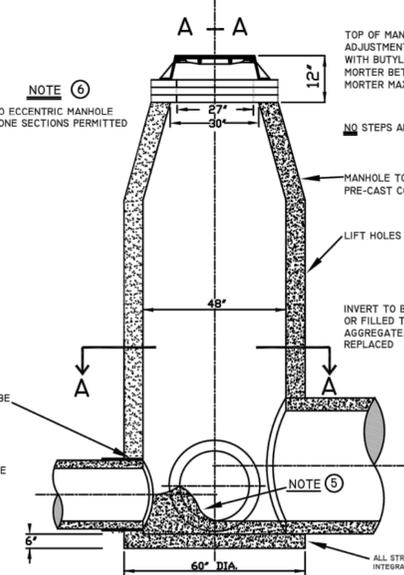


DETAILS OF DROP MANHOLE FOR 30" PIPE OR SMALLER

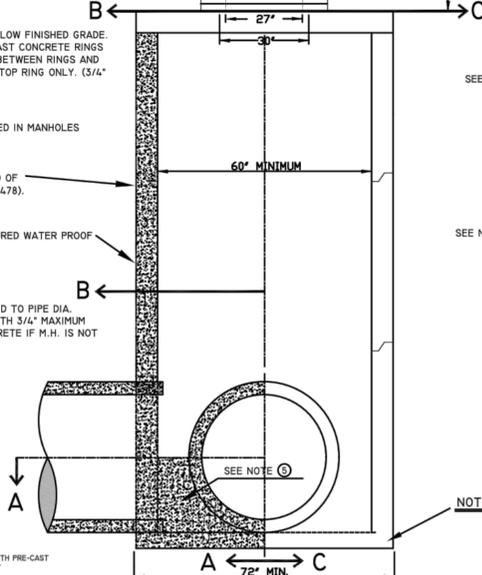


DETAILS OF RISER FOR HOUSE CONNECTION

D-6



DETAILS OF STANDARD MANHOLE FOR 30" PIPE OR SMALLER



DETAILS OF STANDARD MANHOLE FOR 36" PIPE OR LARGER

NOTE 12
THE CONNECTION OF ALL PVC SANITARY SEWER PIPE, SIZE 6" TO 30", TO PRECAST MANHOLES OR OTHER STRUCTURES SHALL EMPLOY A WATERTIGHT, FLEXIBLE PIPE-TO-MANHOLE CONNECTOR

THE CONNECTOR SHALL CONSIST OF A SINGLE RUBBER GASKET, SHALL BE CONSTRUCTED SOLELY OF SYNTHETIC OR NATURAL RUBBER, SHALL MEET/EXCEED THE REQUIREMENTS OF ASTM C 923, AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 1600 PSI

THE CONNECTOR SHALL BE THE SOLE ELEMENT RELIED ON TO ASSURE A FLEXIBLE, WATERTIGHT SEAL OF THE PIPE TO THE STRUCTURE

NOTE 6
NO ECCENTRIC MANHOLE CONE SECTIONS PERMITTED

NOTE 1
TOP OF MANHOLE TO BE 12" BELOW FINISHED GRADE. ADJUSTMENT TO BE OF PRE-CAST CONCRETE RINGS WITH BUTYL GASKETS (ROPE) BETWEEN RINGS AND MORTAR BETWEEN CASTING & TOP RING ONLY. (5/4" MORTAR MAX.)

NOTE 2
NO STEPS ARE TO BE INSTALLED IN MANHOLES

NOTE 3
MANHOLE TO BE CONSTRUCTED OF PRE-CAST CONCRETE (ASTM C-476).

NOTE 4
LIFT HOLES TO BE MANUFACTURED WATER PROOF

NOTE 5
INVERT TO BE FACTORY MOLDED TO PIPE DIA. OR FILLED TO DIRECT FLOW WITH 3/4" MAXIMUM AGGREGATE, 3500 P.S.I. CONCRETE IF M.H. IS NOT REPLACED

NOTE 7
ALL STRUCTURES TO BE MADE WITH PRE-CAST INTEGRAL FOOTING BASE, MIN. 6"

PROJECT SANITARY SEWER DETAILS
LOCATION D-6
RESOLUTION DATE

ENGINEERING DEPT.
City of LaCrosse, Wis.

| NO. | DATE | BY | REVISION |
|-----|------|----|----------|
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SCALE: NONE
SHEET NO. TOTAL SHEETS

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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
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PROJECT NO. 20-24403
FILE NAME 24403 CO-DETAILS
DRAWN BY CLF, SMD
DESIGNED BY KBR
REVIEWED BY KBR
ORIGINAL ISSUE DATE ---
CLIENT PROJECT NO. -

TITLE

SITE DETAILS

SHEET

C0-16

D-6 sanitary sewer_detail

(D-6)sanitary sewer_detail

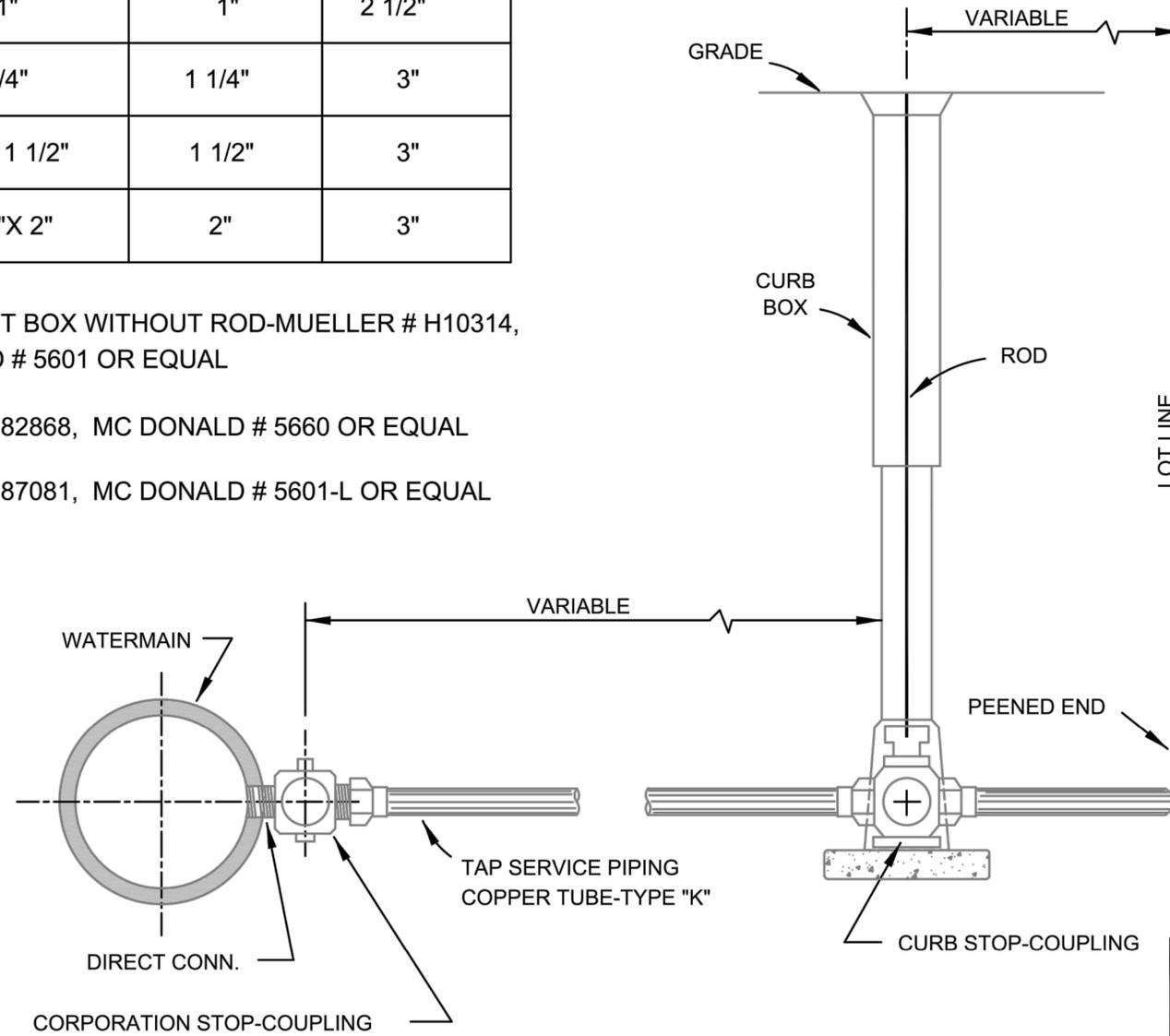
DETAIL OF SERVICE SHUT-OFF

| SERVICE PIPE | CORP. STOP | CURB STOP | SERVICE BOX |
|--------------|----------------|-----------|-------------|
| 1" | 1" | 1" | 2 1/2" |
| 1 1/4" | 1 1/4" | 1 1/4" | 3" |
| 1 1/2" | 1 1/4"X 1 1/2" | 1 1/2" | 3" |
| 2" | 1 1/2"X 2" | 2" | 3" |

CURB BOX : SEVEN FOOT BOX WITHOUT ROD-MUELLER # H10314,
MC DONALD # 5601 OR EQUAL

54" or 57" ROD : MUELLER # 82868, MC DONALD # 5660 OR EQUAL

LID : MUELLER # 87081, MC DONALD # 5601-L OR EQUAL



NOTE:

SERVICES SMALLER THAN 1" ARE TO BE TAPPED
45° TO VERTICAL ON WATERMAIN

| | | | |
|--|---------------------------------|-------------|--------------|
| PROJECT No. | <i>WATERMAIN DETAILS</i> | | |
| LOCATION | | | |
| RESOLUTION | DATE | | |
| ENGINEERING DEPT. City of La Crosse, WI. | | | |
| FIELD BOOK | SURVEYED | BY | DATE |
| NUMBER | DRAWN | PRELIMINARY | |
| | CHECKED | FINAL | |
| PAGE | APPROVED | | 01/2021 |
| | REVISIONS | | |
| SHEET NO. | D-3 | | TOTAL SHEETS |



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 CO-DETAILS |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

TITLE

SITE DETAILS

SHEET

C0-17

PRELIMINARY NOT FOR CONSTRUCTION

| STORM DRAIN APRON SCHEDULE | | | | |
|----------------------------|-----------------|----------------|------------------|----------|
| APRON NO. | APRON SIZE (in) | APRON MATERIAL | INVERT ELEVATION | PIPE NO. |
| FES-1 | 12 | RC | 643.06 | P-1 |

| STORM DRAIN PIPE SCHEDULE | | | | | | | | | |
|---------------------------|------------|-----------------|----------|------------------|----------------|----------|------------|------------|------------------|
| PIPE NO. | DRAIN FROM | INLET ELEVATION | DRAIN TO | OUTLET ELEVATION | PIPE SIZE (IN) | MATERIAL | PIPE CLASS | PIPE GRADE | PIPE LENGTH (FT) |
| P-1 | A-1 | 643.28 | FES-1 | 643.06 | 12 | RCP | IV | 0.36% | 61 |
| P-1A | A-1A | 643.32 | A-1 | 643.24 | 12 | RCP | IV | 0.36% | 24 |
| P-2 | A-2 | 643.93 | A-1 | 643.28 | 12 | RCP | IV | 0.36% | 182 |
| P-2A | A-2A | 644.02 | A-2 | 643.93 | 12 | RCP | IV | 0.36% | 24 |
| P-3 | A-3 | 644.48 | A-2 | 643.93 | 12 | RCP | IV | 0.36% | 151 |
| P-3A | A-3A | 644.56 | A-3 | 644.47 | 12 | RCP | IV | 0.36% | 24 |
| P-4 | A-4 | 638.41 | A-4A | 638.29 | 12 | RCP | IV | 0.50% | 24 |
| P-4A | A-4A | 638.09 | EX-CB | 637.98 | 12 | RCP | IV | 0.50% | 22 |
| P-6 | A-6 | 639.62 | A-5 | 639.22 | 18 | RCP | III | 2.00% | 20 |
| P-8 | A-8 | 640.25 | A-7 | 639.77 | 18 | RCP | III | 0.50% | 95 |
| P-10 | A-10 | 641.49 | A-9 | 641.00 | 18 | RCP | III | 0.68% | 73 |
| P-11 | A-11 | 641.86 | A-10 | 641.49 | 18 | RCP | III | 0.50% | 74 |
| P-12 | A-12 | 641.89 | A-32 | 641.11 | 8 | PVC | SDR 35 | 0.90% | 86 |
| P-13 | A-13 | 642.88 | A-12 | 642.09 | 8 | PVC | SDR 35 | 1.00% | 59 |
| P-14 | A-14 | 643.29 | A-13 | 642.88 | 6 | PVC | SDR 35 | 1.00% | 41 |
| P-16 | A-16 | 641.37 | A-15 | 641.00 | 18 | RCP | III | 0.60% | 61 |
| P-17 | A-17 | 642.13 | A-16 | 641.37 | 18 | RCP | III | 0.50% | 151 |
| P-18 | A-18 | 641.90 | A-16 | 641.37 | 12 | PVC | SDR 35 | 0.50% | 106 |
| P-19 | A-19 | 642.33 | A-18 | 642.10 | 8 | PVC | SDR 35 | 0.50% | 46 |
| P-20 | A-20 | 643.73 | A-19 | 642.53 | 8 | PVC | SDR 35 | 0.50% | 240 |
| P-21 | A-21 | 642.55 | A-18 | 641.95 | 8 | PVC | SDR 35 | 0.50% | 119 |
| P-22 | A-22 | 644.04 | A-21 | 642.74 | 8 | PVC | SDR 35 | 0.50% | 260 |
| P-23 | A-23 | 642.80 | A-9 | 642.14 | 8 | PVC | SDR 35 | 0.51% | 91 |
| P-24 | A-24 | 643.44 | A-23 | 642.60 | 8 | PVC | SDR 35 | 0.50% | 169 |

** PIPE LENGTH INCLUDES LENGTH OF APRON

| STORM DRAIN STRUCTURE SCHEDULE | | | | | | | | | |
|--------------------------------|--------------------|---------------------|--------------------|-----------------------------------|------------------|----------------------------|------------------|-------------|--|
| STRUCTURE NO. | STRUCTURE TYPE | STRUCTURE SIZE (In) | STRUCTURE MATERIAL | CASTING | PAY HEIGHT LN FT | * TOP OF CASTING ELEVATION | INVERT ELEVATION | OUTLET PIPE | |
| A-1 | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR EQUAL | 4.14 | 647.38 | 643.24 | P-1 | |
| A-1A | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR EQUAL | 4.06 | 647.38 | 643.32 | P-1A | |
| A-2 | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR APPROVED EQUAL | 3.45 | 647.38 | 643.93 | P-2 | |
| A-2A | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR APPROVED EQUAL | 3.37 | 647.38 | 644.02 | P-2A | |
| A-3 | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR APPROVED EQUAL | 2.90 | 647.37 | 644.47 | P-3 | |
| A-3A | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR APPROVED EQUAL | 2.81 | 647.37 | 644.56 | P-3A | |
| A-4 | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR APPROVED EQUAL | 3.95 | 642.36 | 638.41 | P-4 | |
| A-4A | WisDOT CATCH BASIN | 36 x 24 | RC | NEENAR R-3246-A OR APPROVED EQUAL | 4.09 | 642.18 | 638.09 | P-4A | |
| A-5 | WisDOT MANHOLE | 48 Ø | RC | SOLID | 6.39 | 644.91 | 638.52 | P-100 (1) | |
| A-6 | WisDOT MANHOLE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 5.88 | 645.50 | 639.62 | P-6 | |
| A-7 | WisDOT MANHOLE | 48 Ø | RC | SOLID | 7.02 | 644.64 | 637.61 | P-46 | |
| A-8 | OUTLET STRUCTURE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 6.42 | 646.67 | 640.25 | P-8 | |
| A-9 | WisDOT MANHOLE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 5.61 | 646.61 | 641.00 | | |
| A-10 | WisDOT MANHOLE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 5.41 | 646.91 | 641.49 | P-10 | |
| A-11 | WisDOT MANHOLE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 5.01 | 646.88 | 641.86 | P-11 | |
| A-12 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 5.28 | 647.16 | 641.89 | P-12 | |
| A-13 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 4.78 | 647.45 | 642.68 | P-13 | |
| A-14 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 4.17 | 647.45 | 643.29 | P-14 | |
| A-15 | WisDOT MANHOLE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 5.97 | 646.97 | 641.00 | | |
| A-16 | WisDOT MANHOLE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 5.22 | 646.59 | 641.37 | P-16 | |
| A-17 | WisDOT MANHOLE | 48 Ø | RC | NEENAR R-2502 GRATE TYPE D | 4.86 | 646.98 | 642.13 | P-17 | |
| A-18 | DRAIN BASIN | 15 Ø | PVC | 15" PEDESTRIAN GRATE | 5.42 | 647.32 | 641.90 | P-18 | |
| A-19 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 4.69 | 647.02 | 642.33 | P-19 | |
| A-20 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 2.87 | 646.60 | 643.73 | P-20 | |
| A-21 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 4.49 | 647.03 | 642.55 | P-21 | |
| A-22 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 3.42 | 647.46 | 644.04 | P-22 | |
| A-23 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 4.90 | 647.50 | 642.60 | P-23 | |
| A-24 | DRAIN BASIN | 12 Ø | PVC | 12" PEDESTRIAN GRATE | 4.00 | 647.44 | 643.44 | P-24 | |

*TOP OF CASTING ELEVATIONS ON CURB STYLE CATCH BASINS = TOP BACK OF CURB BOX, NOT GUTTER ELEVATION

| SANITARY SEWER PIPE SCHEDULE | | | | | | | | | |
|------------------------------|------------|-----------------|----------|------------------|-----------|----------|------------|------------|------------------|
| PIPE NO. | DRAIN FROM | INLET ELEVATION | DRAIN TO | OUTLET ELEVATION | PIPE SIZE | MATERIAL | PIPE CLASS | PIPE GRADE | PIPE LENGTH (FT) |
| SP-2 | S-2 | 634.00 | S-1 | 633.60 | 8" | PVC | SDR-35 | 0.40% | 102 |
| SP-3 | S-3 | 635.01 | S-2 | 634.10 | 8" | PVC | SDR-35 | 0.40% | 227 |
| SP-4 | S-4 | 635.33 | S-3 | 635.11 | 8" | PVC | SDR-35 | 0.40% | 54 |
| SP-5 | S-5 | 634.89 | S-2 | 634.10 | 8" | PVC | SDR-35 | 0.40% | 197 |

| SANITARY SEWER STRUCTURE SCHEDULE | | | | | | | | | |
|-----------------------------------|------------------|---------------------|--------------------|---------|------------------|--------------------------|------------------|-------------|--|
| STRUCTURE NO. | STRUCTURE TYPE | STRUCTURE SIZE (In) | STRUCTURE MATERIAL | CASTING | PAY HEIGHT LN FT | TOP OF CASTING ELEVATION | INVERT ELEVATION | OUTLET PIPE | |
| S-1 | SANITARY MANHOLE | 48 Ø | RC | CASTING | 13.19 | 646.69 | 633.50 | P-71 | |
| S-2 | SANITARY MANHOLE | 48 Ø | RC | CASTING | 13.17 | 647.17 | 634.00 | SP-2 | |
| S-3 | SANITARY MANHOLE | 48 Ø | RC | CASTING | 12.10 | 647.12 | 635.01 | SP-3 | |
| S-4 | SANITARY MANHOLE | 48 Ø | RC | CASTING | 11.91 | 647.23 | 635.33 | SP-4 | |
| S-5 | SANITARY MANHOLE | 48 Ø | RC | CASTING | 12.24 | 647.14 | 634.89 | SP-5 | |



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C3-SITE |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

TITLE

UTILITY SCHEDULES

SHEET

C0-20

PRELIMINARY NOT FOR CONSTRUCTION

STORM WATER POLLUTION PREVENTION PLAN NOTES:

GENERAL PROJECT INFORMATION:

PROJECT NARRATIVE:

This project consists of the construction of a 2 72-unit apartment buildings, 14 townhomes, 1 mixed use building, concrete pavement, asphalt pavement, curb & gutter, and concrete walk, along with all the necessary grading, utilities, storm water management, erosion control, and any additional components.

RESPONSIBLE PARTIES:

Owner are required to apply for and receive a Wisconsin Pollution Discharge Elimination System (WPDES) Stormwater Construction Permit from the WDNR at least 14 working days prior to beginning work.

Contractor and owner shall identify a person knowledgeable and experienced in the application of erosion prevention and sediment control BMP's who will oversee the implementation of the erosion control plan.

Company: Contact Person: Phone:

Company: Contact Person: Phone:

Owner shall identify the entity responsible for the long term Operation and Maintenance of the storm water management system.

Company: Contact Person: Phone:

PROJECT AREAS:

Total project size (disturbed area) = 4.51 acres

Minimum area requiring WDNR permit = 1.00 acres

****PROJECT DOES REQUIRE A WPDES PERMIT****

Existing area of impervious surface = 0.05 acres

Post construction area of impervious surface = 2.46 acres

Total new impervious surface area created = 2.41 acres

SOIL TYPE:

Poorly graded sand with silt.

Poorly graded sand.

CONSTRUCTION ACTIVITY NOTES:

EROSION PREVENTION:

Construction of silt fence and all other erosion control measures shall be complete before other construction activity occurs. Use phased construction wherever practical and establish turf as soon as possible to minimize sediment transport.

Temporary cover during construction is incidental.

Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours after connection to a surface water.

All disturbed areas shall be seeded and mulched at the earliest possible time to prevent/reduce erosion.

A. Seed for the biofiltration basins and swales shall be WisDOT mix #75 with mix #60 as a nurse crop and shall meet Specification Section 630. All other seed shall be WisDOT mix #20 and shall meet Specification Section 630. Mulching shall be applied according to Specification Section 627.

B. Fertilizer shall be WisDOT Type B and shall meet Specification Section 629.

C. Temporary mulching shall be applied at a rate of 2 tons/acre. Mulch shall be disc anchored.

Additional erosion prevention measures may be found at the Wisconsin Department of Natural Resources Best Management Practices.

SEDIMENT CONTROL PRACTICES:

Construction of silt fence and all other erosion control measures shall be complete prior to land disturbing activities occur.

A tracking pad entrance or other approved alternatives must be constructed at the exit point from the project site.

Inlet erosion protection shall be installed and maintained until turf or pavement has been established.

The contractor shall be responsible to control erosion from leaving the construction zone. All eroded material that leaves the construction zone shall be collected by the contractor and returned to the site at the contractor's expense.

Contractor shall maintain a 50-foot natural buffer or use redundant sediment controls near surface waters if a buffer is not feasible.

Contractor shall take the necessary steps to minimize soil compaction and preserve topsoil on site.

All streets must be swept within 24 hours when any tracking occurs.

Silt fence or other effective erosion control measures must be installed around the perimeter of any soil stockpiled, including temporary stockpiles, at this location or any other on the project site. Stockpiles cannot be placed in surface waters, including storm water conveyances such as curb and gutter systems, or conduits and ditches.

DEWATERING AND BASIN DRAINING:

Dewater sediment-laden water to sedimentation basins if possible, or use other BMP's to prevent erosion when discharging to surface waters. Use appropriate energy dissipation measures on all discharges.

Dewatering practices cannot cause nuisance conditions, erosion or in receiving channels or inundation of wetlands resulting in adverse impacts.

POLLUTION PREVENTION:

All solid waste collected from the construction site must be disposed in accordance with all applicable regulations.

All hazardous materials (oil, gasoline, fuel, paint, etc) must be properly stored to prevent spills, leaks, or other discharge. Storage areas shall provide secondary containment and a hazardous materials spill kit. Equipment fueling and maintenance shall occur in a designated, contained area. Storage and disposal of hazardous waste must be in compliance with all applicable regulations. All runoff containing any hazardous material must be properly collected and disposed. No engine degreasing shall be allowed on site.

All sanitary wastes must be collected from portable units on site by a licensed sanitary waste management contractor. The units must be secured and shall be maintained on a regular basis as needed to prevent overflowing.

CONSTRUCTION ACTIVITY NOTES (CONTINUED):

Emergency Spill Plan - The Contractor is responsible for all construction personnel to be informed of the manufacturers' recommended spill cleanup methods, and the location of that information and cleanup supplies. The Contractor shall modify the SWPPP as required within seven calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. Plans must identify measures to prevent the reoccurrence of such releases. If a spill occurs, the following steps shall be followed:

1. Observe the safety precautions associated with the spilled material. Stop the source of the spill, if you can do so safely. Call 911 if fire or public safety hazards are created.
2. Contain the spilled material. Dirt, sand, or any semi-impermeable material may be used to create a containment structure to prevent the material from flowing.
3. Report the spill to Wisconsin's Spill Hotline at (800) 943-0003.
4. Clean up the spilled material and dispose of the wastes properly.

The contractor is responsible for monitoring air pollution and ensuring it does not exceed levels set by local, state, or federal regulations. This includes dust created by work being performed on the site. Air pollution and dust control correction is considered incidental to the unit bid prices for which work is being performed. Additional dust control measures may be required by the Engineer.

Concrete washout onsite: All liquid and solid wastes generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner. A compacted clay liner that does not allow washout liquids to enter ground water is considered an impermeable liner. The liquid and solid wastes must not contact the ground, and there must not be runoff from the concrete washout operations or areas. Liquid and solid wastes must be disposed of properly. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.

INSPECTION AND MAINTENANCE:

The Permittees must routinely inspect the construction site once every seven (7) days during active construction and within 24 hours of a rainfall event greater than 0.5 inches in a 24 hour period.

All inspections performed during construction must be recorded and records retained with the erosion plan in accordance with the Permit. Contractor is responsible for keeping a record of all rainfall data & erosion control maintenance until final establishment of turf.

Erosion control and other BMP's must be replaced, repaired, or supplemented when they reach 33% design load.

FINAL STABILIZATION:

The Contractor must ensure final stabilization of the site. The Contractor must submit a Notice of Termination when the site has undergone final stabilization and all stormwater discharges associated with the construction site activities that require to have WPDES coverage have ceased.

All temporary erosion control measures and BMP's must be removed as part of the final site stabilization.

The storm water permit further defines final stabilization and its requirements.



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 CO-DETAILS |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

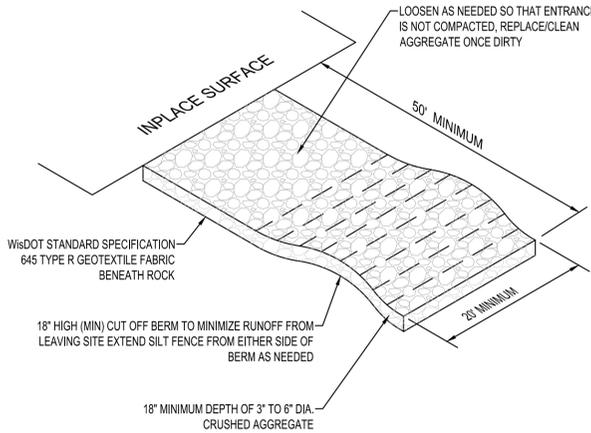
TITLE
EROSION CONTROL NOTES

SHEET
C1-10

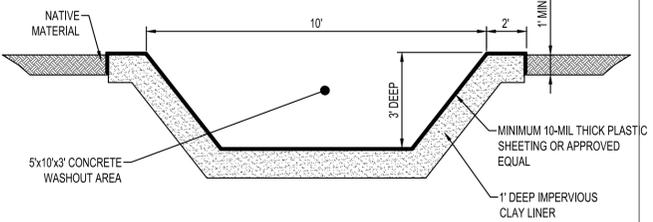
PRELIMINARY NOT FOR CONSTRUCTION



PRELIMINARY NOT FOR CONSTRUCTION



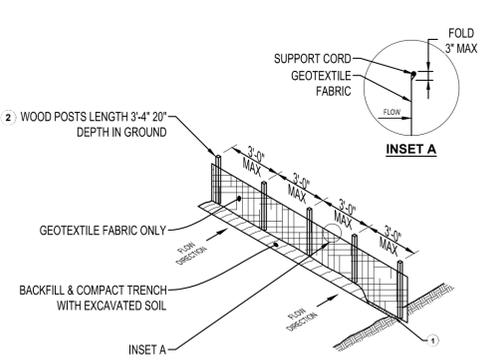
ROCK TRACKING PAD
NTS EC600



NOTES:

- CONTRACTOR SHALL INSTALL A SIGN INDICATING THE CONCRETE WASHOUT AREA.
- CONTRACTOR SHALL MAINTAIN WASHOUT AREA TO REMOVE MATERIALS BEYOND 75% CAPACITY.
- WASHOUT AREA SHALL NOT BE PLACED WITHIN 50' OF STORM DRAINS, OPEN DITCHES OR BODIES OF WATER.
- CONTRACTOR SHALL INSPECT WASHOUT AREA AS NECESSARY TO PREVENT LEAKS AND OVER TOPPING.
- WASHOUT AREA SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE.

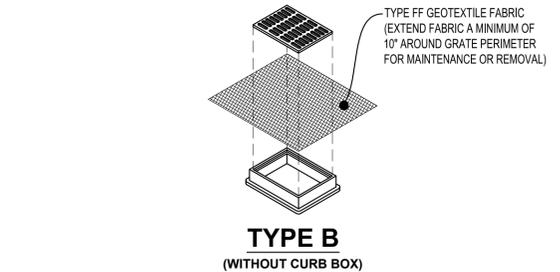
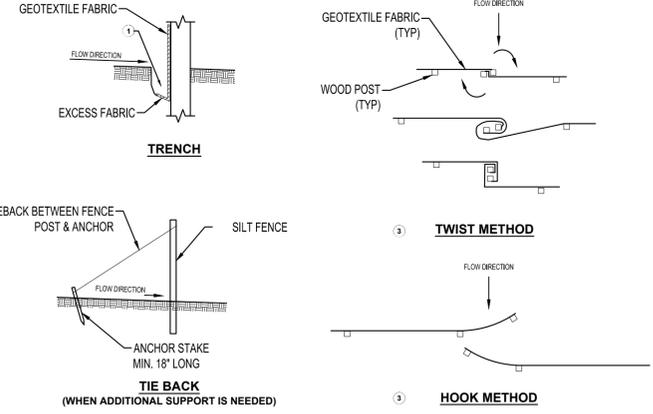
CONCRETE WASHOUT
NTS EC500



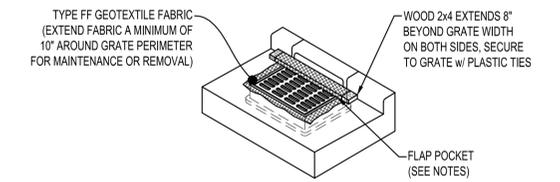
NOTES:

- ATTACH FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH & NAILS.
- ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS.
- 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.
- TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY & ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH, BACKFILL, & COMPACT TRENCH WITH EXCAVATED SOIL.
- WOOD POST SHALL BE A MINIMUM SIZE OF 1 1/2" x 1 1/2" OF OAK OR HICKORY.
- CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS.
 - A. TWIST METHOD - OVERLAP THE END POSTS & TWIST, OR ROTATE AT LEAST 180°.
 - B. HOOK METHOD - HOOK END OF EACH SILT FENCE LENGTH.

SILT FENCE
NTS EC100



TYPE B
(WITHOUT CURB BOX)

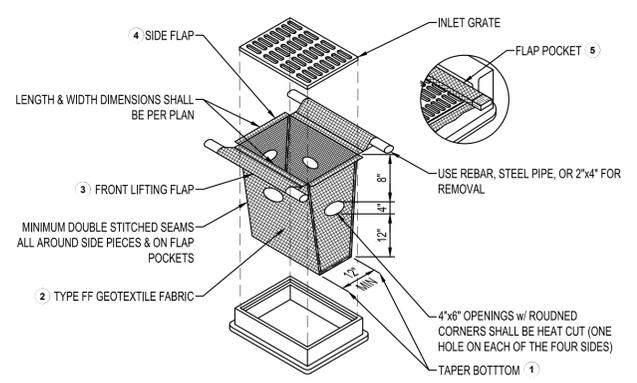


TYPE C
(WITH CURB BOX)

NOTES:

- FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2" x 4". THE REBAR, STEEL PIPE, OR WOOD SHALL BE INSTALLED IN THE REBAR FLAP AND SHALL NOT BLOCK THE TOP HALF OF THE CURB FACE OPENING.
- WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE INLET SHALL BE IMMEDIATELY REMOVED.

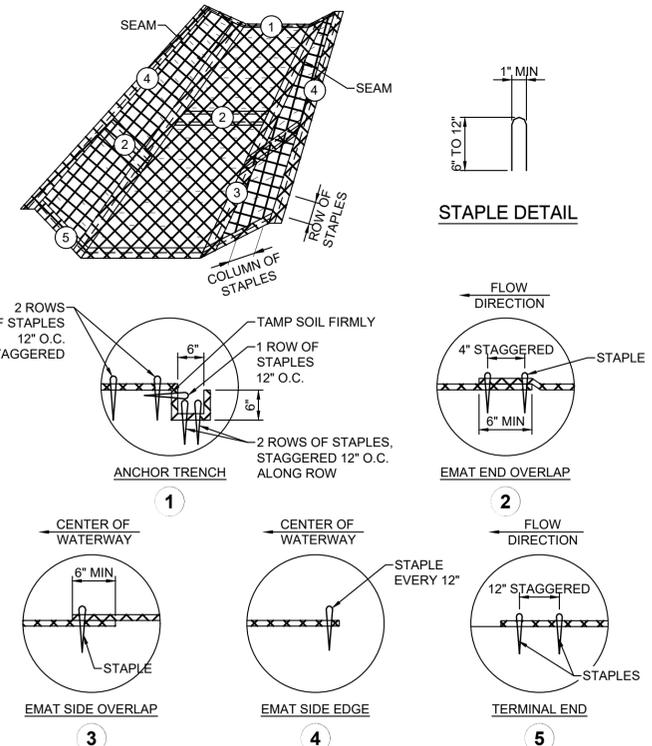
TYPES B & C
INLET PROTECTION
NTS EC221



NOTES:

- TAPER BOTTOM OF BAG TO MAINTAIN THREE INCHES OF CLEARANCE BETWEEN THE BAG & THE STRUCTURE MEASURED FROM THE BOTTOM OF THE OVERFLOW OPENINGS TO THE STRUCTURE WALL.
- GEOTEXTILE FABRIC TYPE FF FOR FLAPS, TOP & BOTTOM OF OUTSIDE OF FILTER BAG. FRONT, BACK, & BOTTOM OF FILTER BAG BEING ONE PIECE.
- FRONT LIFTING FLAP IS TO BE USED WHEN REMOVING & MAINTAINING FILTER BAG.
- SIDE FLAPS SHALL BE A MAXIMUM OF TWO INCHES LONG. FOLD THE FABRIC OVER & REINFORCE WITH MULTIPLE STICHES.
- FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2" x 4". THE REBAR, STEEL PIPE, OR WOOD SHALL BE INSTALLED IN THE REBAR FLAP & SHALL NOT BLOCK THE TOP HALF OF THE CURB FACE OPENING.
- CAN BE INSTALLED IN INLETS WITH OR WITHOUT CURB BOXES
- WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE INLET SHALL BE IMMEDIATELY REMOVED.

TYPE D
INLET PROTECTION
NTS EC222



NOTES:

- INSTALL EROSION MAT (EMAT) OVER WATERWAYS AS SHOWN IN THE EROSION CONTROL PLAN.
- THE EMAT SHALL CONFORM TO WISDOT STANDARD SPECIFICATIONS SECTION 628.
- PREPARE SOIL PRIOR TO INSTALLING EMAT, INCLUDING SEEDING AND FERTILIZING.
- THE EMAT SHALL BE PLACED IN FIRM CONTACT WITH THE SOIL AND NOT BE ALLOWED TO BRIDGE OVER SURFACE IRREGULARITIES. THE MAT SHALL NOT BE STRETCHED.
- START LAYING THE MATS BY ROLLING CENTER MAT IN THE DIRECTION OF FLOW. CENTERED ON THE CENTERLINE OF WATERWAY. THERE SHALL NOT BE AN OVERLAP OF MATS AT THE CENTER OF THE WATERWAY.
- THE EMAT SHALL BE ANCHORED, OVERLAPPED, AND STAPLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. IF NO MANUFACTURER'S INSTRUCTIONS ARE AVAILABLE, INSTALL THE MAT AS FOLLOWS.
- STAPLES SHALL BE "U" SHAPED, 0.12" DIAMETER WIRE OR GREATER (#11 GAUGE). (SEE STAPLE DETAIL FOR DIMENSIONS)
- BURY UPSTREAM END OF MAT IN A TRENCH 6" WIDE BY 6" DEEP AND STAPLED IN STAGGERED ROWS ACROSS THE WIDTH AS SHOWN IN DETAIL 1.
- FOR JOINING ENDS OF ROLLS, OVERLAP END OF UP SLOPE MAT A MINIMUM OF 6" OVER DOWN SLOPE MAT (SHINGLE STYLE). USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART, AS SHOWN IN DETAIL 2.
- MATS ON SIDE SLOPES SHALL OVERLAP A MINIMUM OF 6" OVER THE MAT BELOW (SHINGLE STYLE). STAPLE OVERLAP AT 12" INTERVALS. (SEE DETAIL 3)
- THE OUTER EDGE ALONG SIDES OF THE MAT SHALL BE STAPLED EVERY 12". (SEE DETAIL 4)
- STAPLES ARE TO BE PLACED ALTERNATELY IN COLUMNS (IN THE DIRECTION OF THE WATERWAY) 2' APART AND IN ROWS (ACROSS THE WATERWAY) 3' APART THROUGHOUT THE AREA COVERED BY THE ECB.
- DOWNSTREAM (TERMINAL) END OF BLANKET SHALL BE STAPLED WITH A DOUBLE ROW OF STAGGERED STAPLES 12" APART. (SEE DETAIL 5)

EROSION MAT INSTALLATION
NTS EC700

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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 CO-DETAILS |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

TITLE

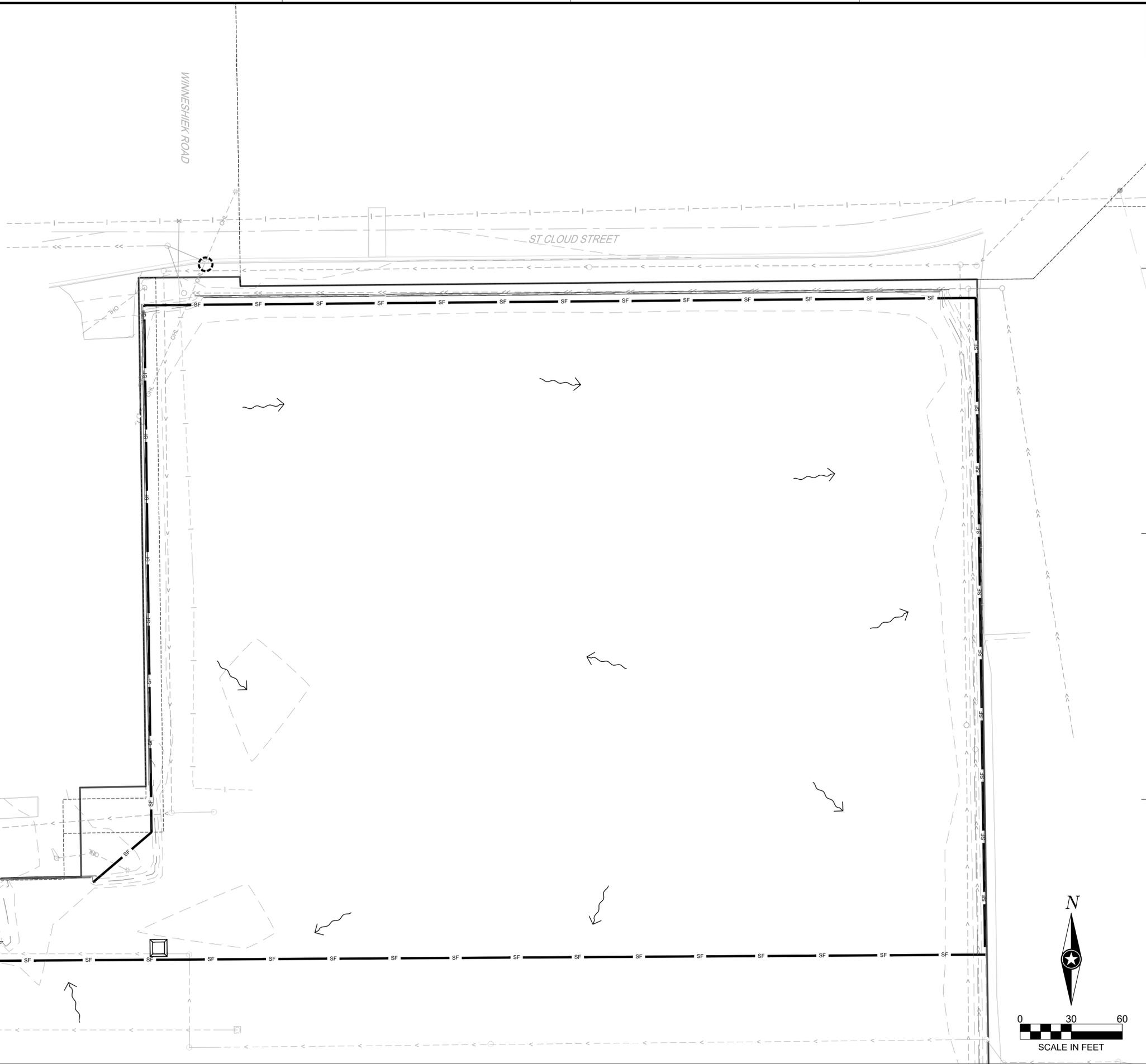
EROSION CONTROL DETAILS

SHEET

EROSION CONTROL LEGEND

| SYMBOL | DESCRIPTION |
|--------|-----------------------------------|
| | SILT FENCE, PREASSEMBLED |
| | STORM DRAIN INLET PROTECTION |
| | ROCK CONSTRUCTION EXIT |
| | CONCRETE WASHOUT AREA |
| | EXISTING DRAINAGE ARROW |
| | EXISTING CONTOUR (MINOR INTERVAL) |
| | EXISTING CONTOUR (MAJOR INTERVAL) |

SEE SITE RESTORATION PLAN FOR FINAL TURF ESTABLISHMENT.
 NOTE: EROSION CONTROL PLAN COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS PLAN, INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.



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PROJECT
RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
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|---------------------|----------------|
| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C1-SWPPP |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

TITLE
PRE-CONSTRUCTION EC PLAN

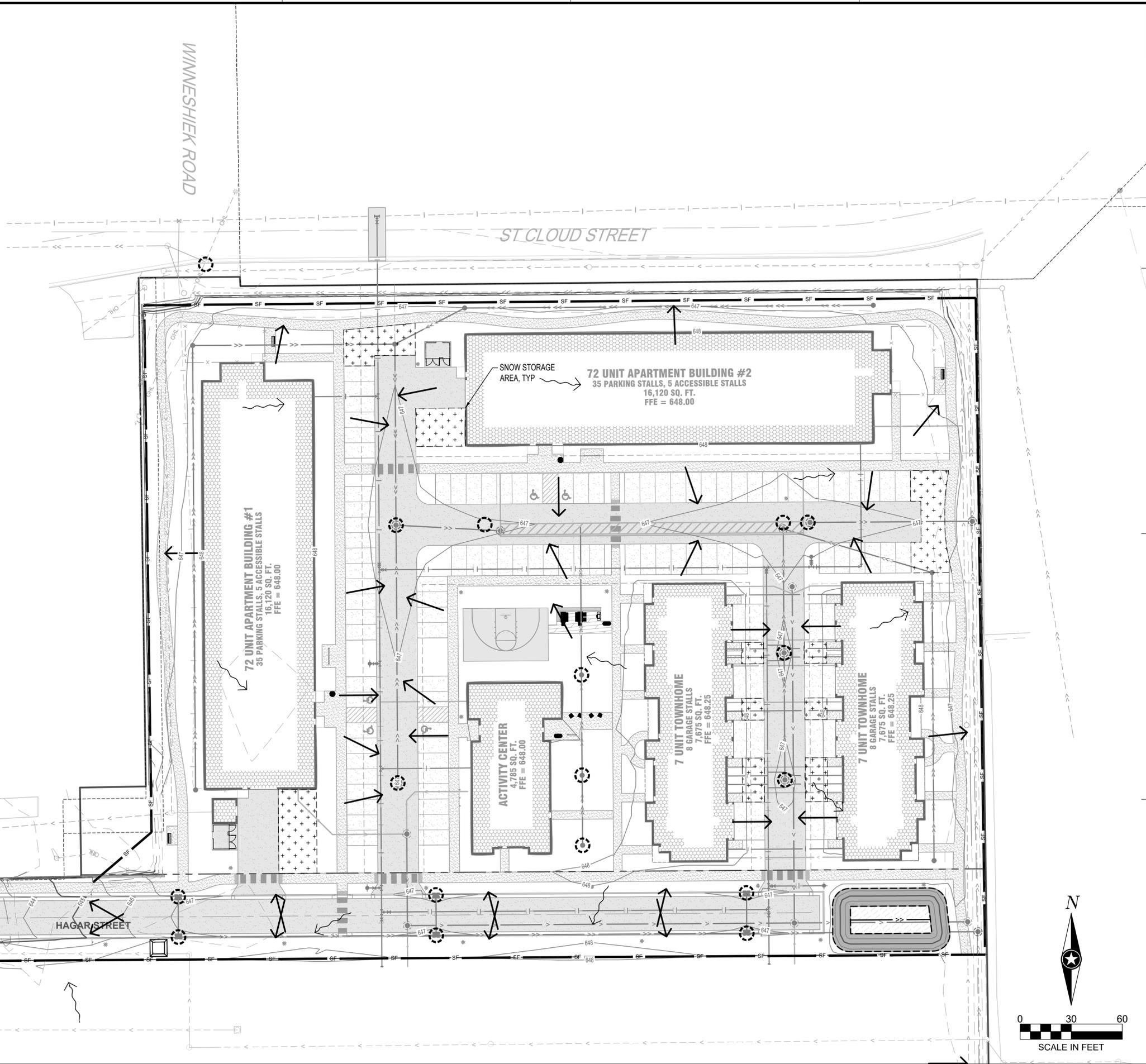
SHEET
C1-20

PRELIMINARY NOT FOR CONSTRUCTION

EROSION CONTROL LEGEND

| SYMBOL | DESCRIPTION |
|--------|-----------------------------------|
| | SILT FENCE, PREASSEMBLED |
| | STORM DRAIN INLET PROTECTION |
| | ROCK CONSTRUCTION EXIT |
| | EROSION CONTROL BLANKET |
| | SNOW STORAGE AREA |
| | CONCRETE WASHOUT AREA |
| | EXISTING DRAINAGE ARROW |
| | PROPOSED DRAINAGE ARROW |
| | EXISTING CONTOUR (MINOR INTERVAL) |
| | EXISTING CONTOUR (MAJOR INTERVAL) |
| | PROPOSED CONTOUR (MINOR INTERVAL) |
| | PROPOSED CONTOUR (MAJOR INTERVAL) |

SEE SITE RESTORATION PLAN FOR FINAL TURF ESTABLISHMENT.
 NOTE: EROSION CONTROL PLAN COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS PLAN, INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.



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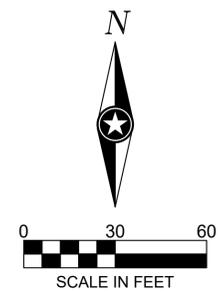
PROJECT
RED CLOUD DEVELOPMENT
 LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| DATE | DESCRIPTION | BY |
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PROJECT NO. 20-24403
 FILE NAME 24403 C1-SWPPP
 DRAWN BY CLF, SMD
 DESIGNED BY KBR
 REVIEWED BY KBR
 ORIGINAL ISSUE DATE ---
 CLIENT PROJECT NO. -

TITLE
PROPOSED EC PLAN

SHEET
C1-30

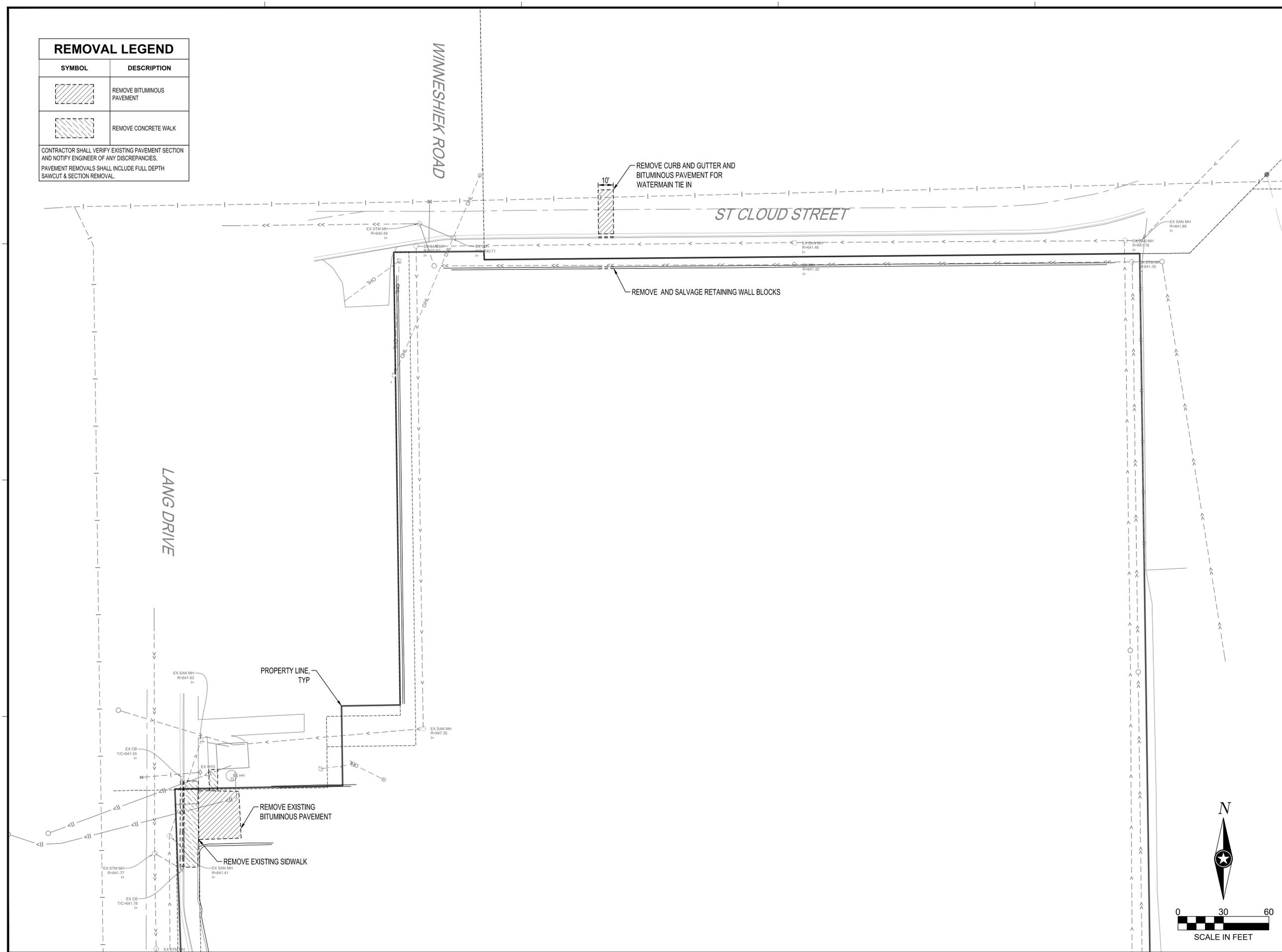


PRELIMINARY NOT FOR CONSTRUCTION



| REMOVAL LEGEND | |
|----------------|----------------------------|
| SYMBOL | DESCRIPTION |
| | REMOVE BITUMINOUS PAVEMENT |
| | REMOVE CONCRETE WALK |

CONTRACTOR SHALL VERIFY EXISTING PAVEMENT SECTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
PAVEMENT REMOVALS SHALL INCLUDE FULL DEPTH SAWCUT & SECTION REMOVAL.



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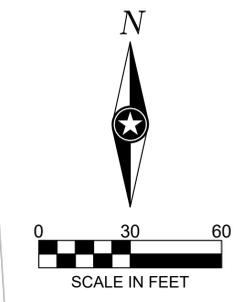
PROJECT
RED CLOUD DEVELOPMENT
LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
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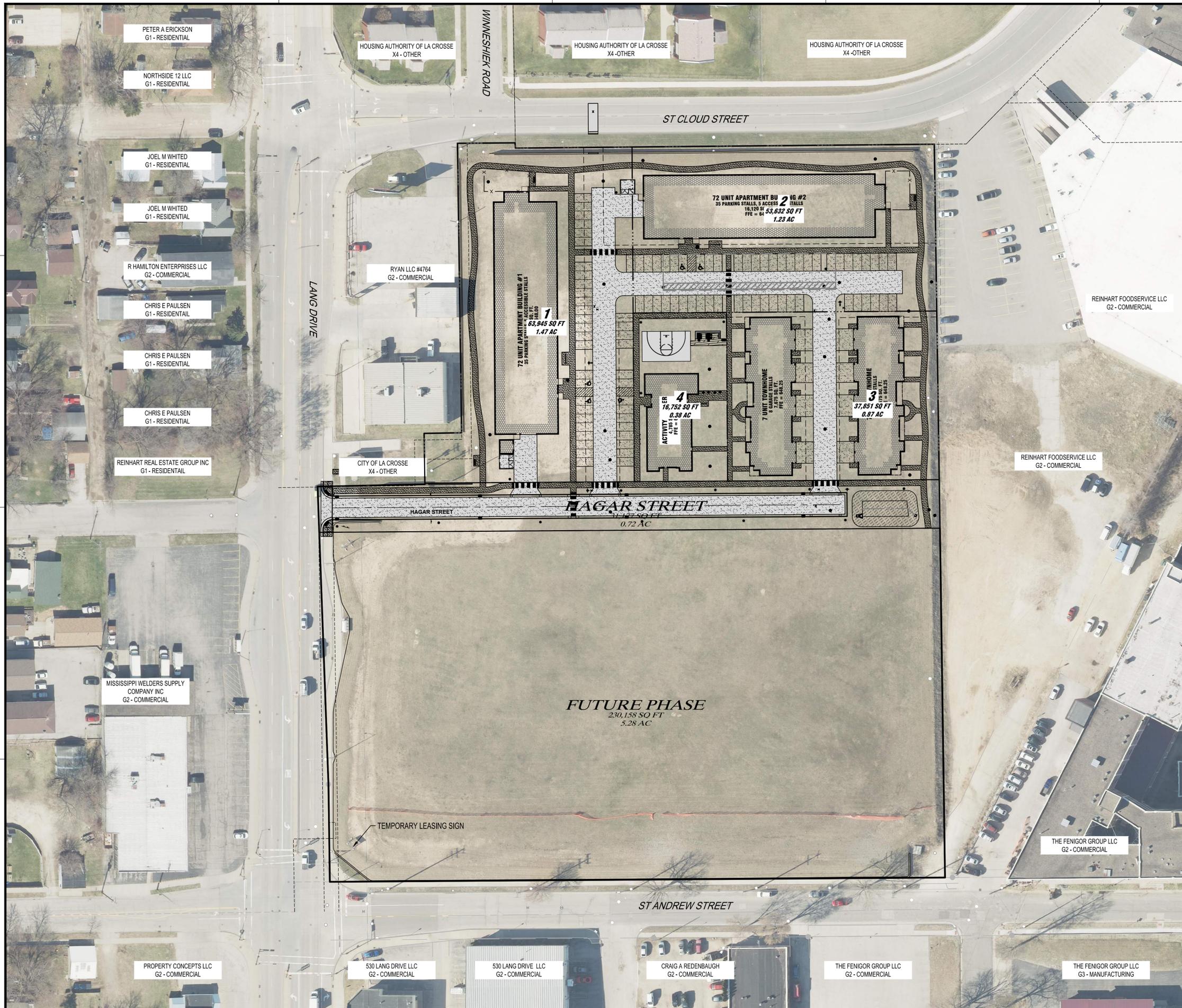
PROJECT NO. 20-24403
FILE NAME 24403 C2-EXIST
DRAWN BY CLF, SMD
DESIGNED BY KBR
REVIEWED BY KBR
ORIGINAL ISSUE DATE ---
CLIENT PROJECT NO. -

TITLE
EXISTING SITE & REMOVAL PLAN

SHEET
C2-10



PRELIMINARY NOT FOR CONSTRUCTION



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
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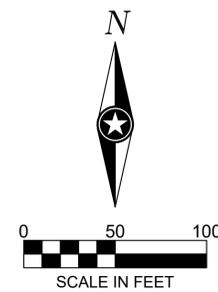
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|---------------------|---------------|
| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C3-SITE |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | - |

TITLE

OVERALL SITE PLAN

SHEET

C3-10



PRELIMINARY NOT FOR CONSTRUCTION

SITE FURNISHINGS

- (A) BENCH
- (B) BIKE RACK
- (C) GAS FIRE PIT
- (D) ADIRONDACK CHAIRS
- (E) TABLE AND CHAIRS
- (F) HAMMOCK POLES
- (G) TRASH RECEPTACLE
- (H) SEE LANDSCAPE FOR RAISED GARDEN BEDS
- (I) SECURITY CAMERA, TO BE LOCATED BY OWNER
- (J) GAZEBO, TO BE LOCATED BY OWNER

SITE LEGEND

| SYMBOL | DESCRIPTION |
|--------|---|
| ① | ACCESSIBLE RAMP, DETECTABLE WARNING, & 2-3 FT CURB TAPERS |
| ② | DETECTABLE WARNING |
| ③ | 3 FT CURB TAPER |
| ④ | 2 FT CURB TAPER |

DENSITY COMPUTATIONS

| | |
|--------------------|-----|
| PROPOSED UNITS | 158 |
| SITE AREA (AC) | 3 |
| DENSITY (UNITS/AC) | 40 |

BICYCLE PARKING DATA

| TYPE | SPACES PROVIDED |
|---------------------------|-----------------|
| PROPOSED SPACES (OUTSIDE) | 22 |
| PROPOSED SPACES (INDOOR) | 40 |
| PROPOSED SPACES (GARAGE) | 14 |
| TOTAL | 76 |

PARKING DATA

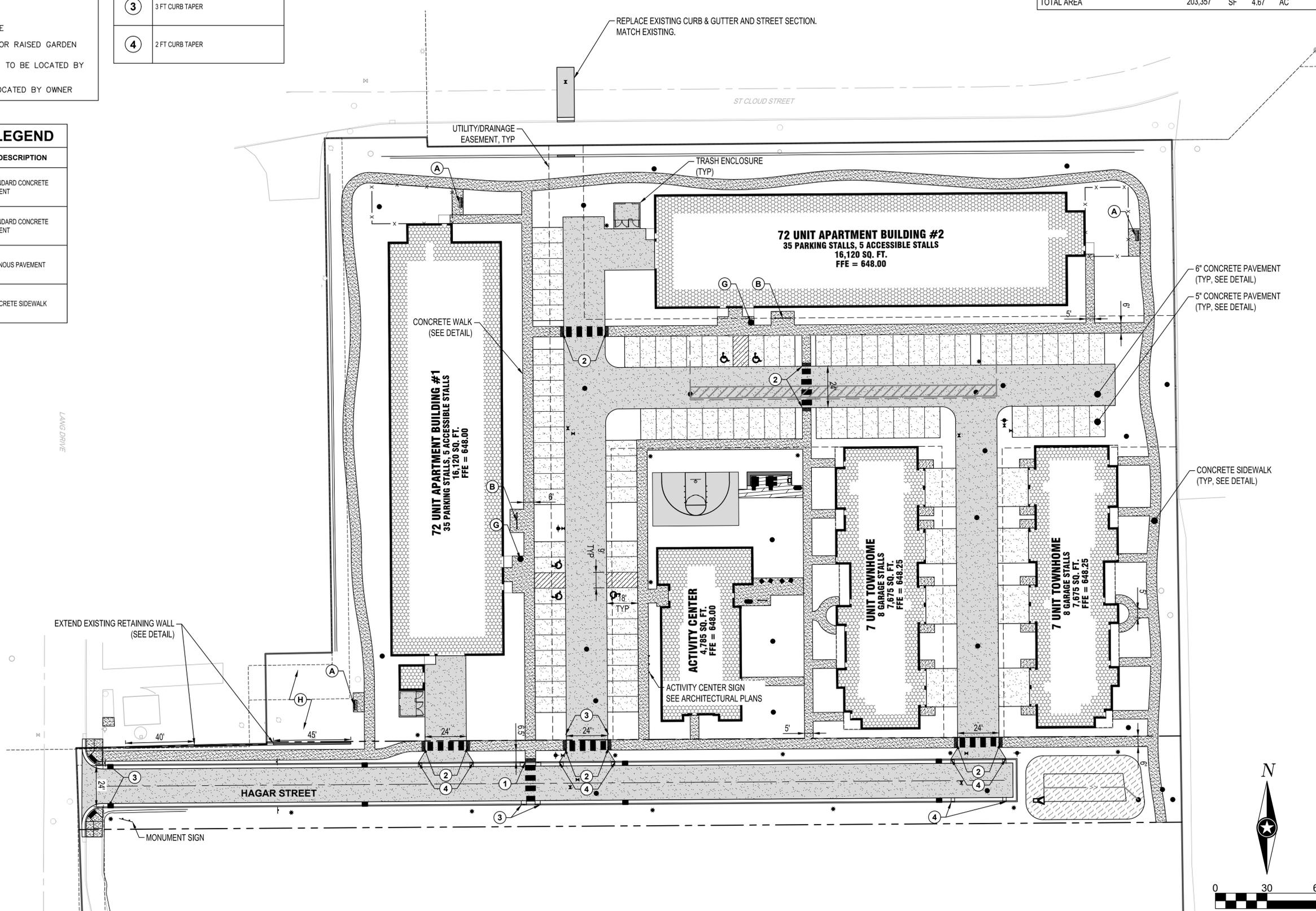
| TYPE | STALLS PROVIDED |
|---------------------------|-----------------|
| PROPOSED STALLS (OUTSIDE) | 79 |
| PROPOSED STALLS (INDOOR) | 84 |
| PROPOSED STALLS (GARAGE) | 16 |
| ACCESSIBLE STALLS | 13 |
| TOTAL | 179 |

SITE AREA SUMMARY

| | UNITS | UNITS | PERCENT |
|------------------------------------|----------------|----------------|-----------|
| PROPOSED BUILDINGS | 52,375 | SF 1.20 | AC 30% |
| IMPERVIOUS AREA (PARKING/SIDEWALK) | 60,613 | SF 1.39 | AC 35% |
| OPEN AREA | 59,192 | SF 1.36 | AC 35% |
| PROPOSED AREA | 172,180 | SF 3.95 | AC 100% |
| PROPOSED ROW | 31,177 | SF 0.72 | AC |
| TOTAL AREA | 203,357 | SF 4.67 | AC |

PAVEMENT LEGEND

| SYMBOL | DESCRIPTION |
|-----------|-------------------------------|
| [Pattern] | 6" STANDARD CONCRETE PAVEMENT |
| [Pattern] | 5" STANDARD CONCRETE PAVEMENT |
| [Pattern] | BITUMINOUS PAVEMENT |
| [Pattern] | 4" CONCRETE SIDEWALK |



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| DATE | DESCRIPTION | BY |
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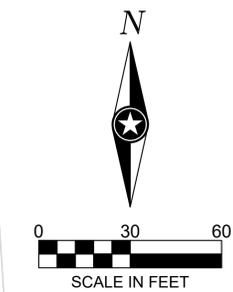
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|---------------------|---------------|
| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C3-SITE |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | --- |

TITLE

DETAILED SITE PLAN

SHEET

C3-11



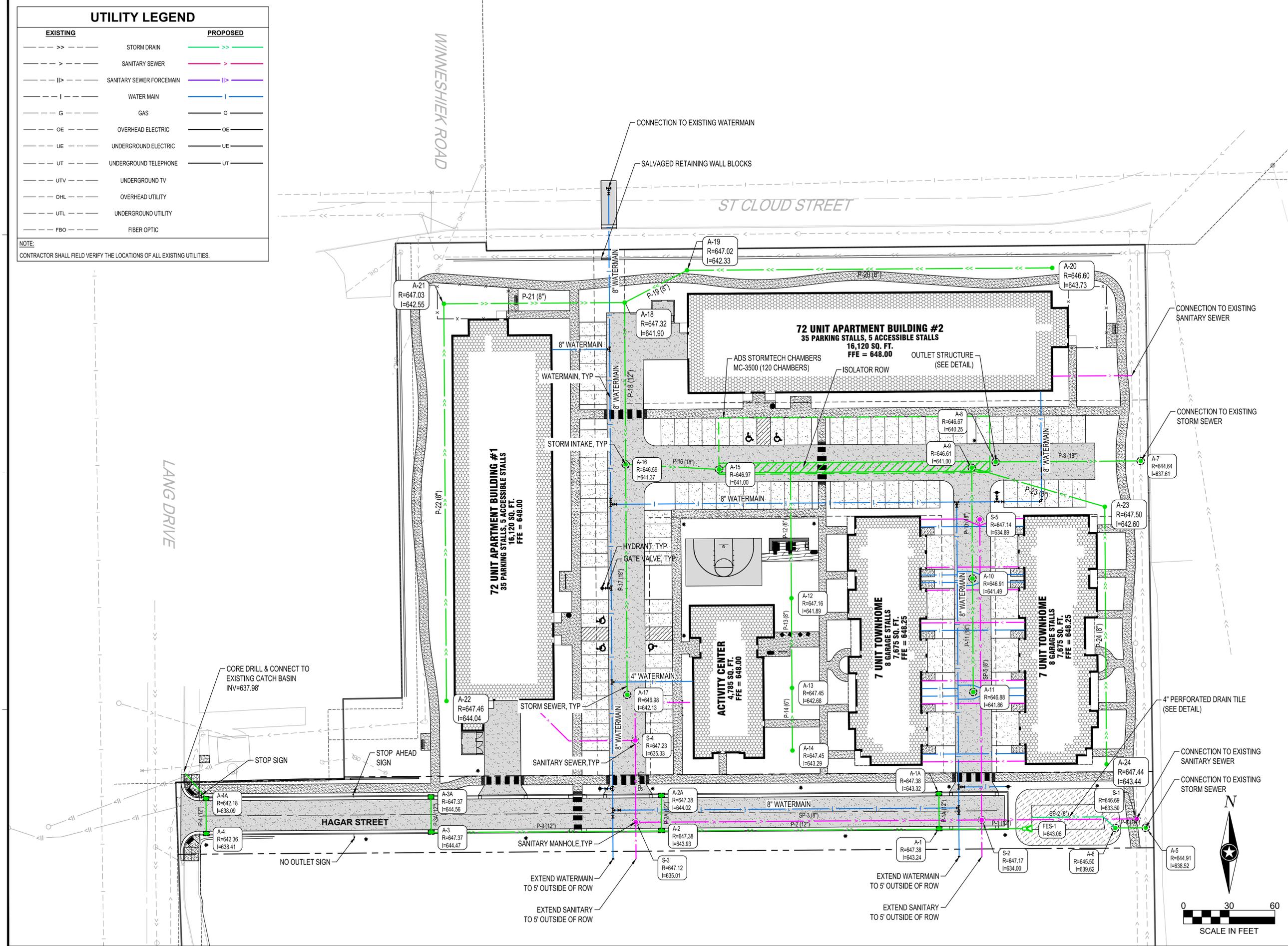
PRELIMINARY NOT FOR CONSTRUCTION



UTILITY LEGEND

| EXISTING | | PROPOSED |
|-----------|--------------------------|-----------|
| --->>--- | STORM DRAIN | --->>--- |
| --->--- | SANITARY SEWER | --->--- |
| --- >--- | SANITARY SEWER FORCEMAIN | --- >--- |
| --- --- | WATER MAIN | --- --- |
| ---G--- | GAS | ---G--- |
| ---OE--- | OVERHEAD ELECTRIC | ---OE--- |
| ---UE--- | UNDERGROUND ELECTRIC | ---UE--- |
| ---UT--- | UNDERGROUND TELEPHONE | ---UT--- |
| ---UTV--- | UNDERGROUND TV | ---UTV--- |
| ---OHL--- | OVERHEAD UTILITY | ---OHL--- |
| ---UTL--- | UNDERGROUND UTILITY | ---UTL--- |
| ---FBO--- | FIBER OPTIC | ---FBO--- |

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES.



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PROJECT
RED CLOUD DEVELOPMENT

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
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PROJECT NO. 20-24403
FILE NAME 24403 C3-SITE
DRAWN BY CLF, SMD
DESIGNED BY KBR
REVIEWED BY KBR
ORIGINAL ISSUE DATE ---
CLIENT PROJECT NO. ---

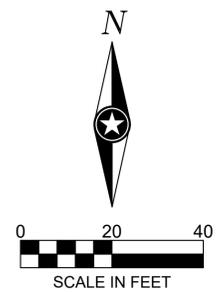
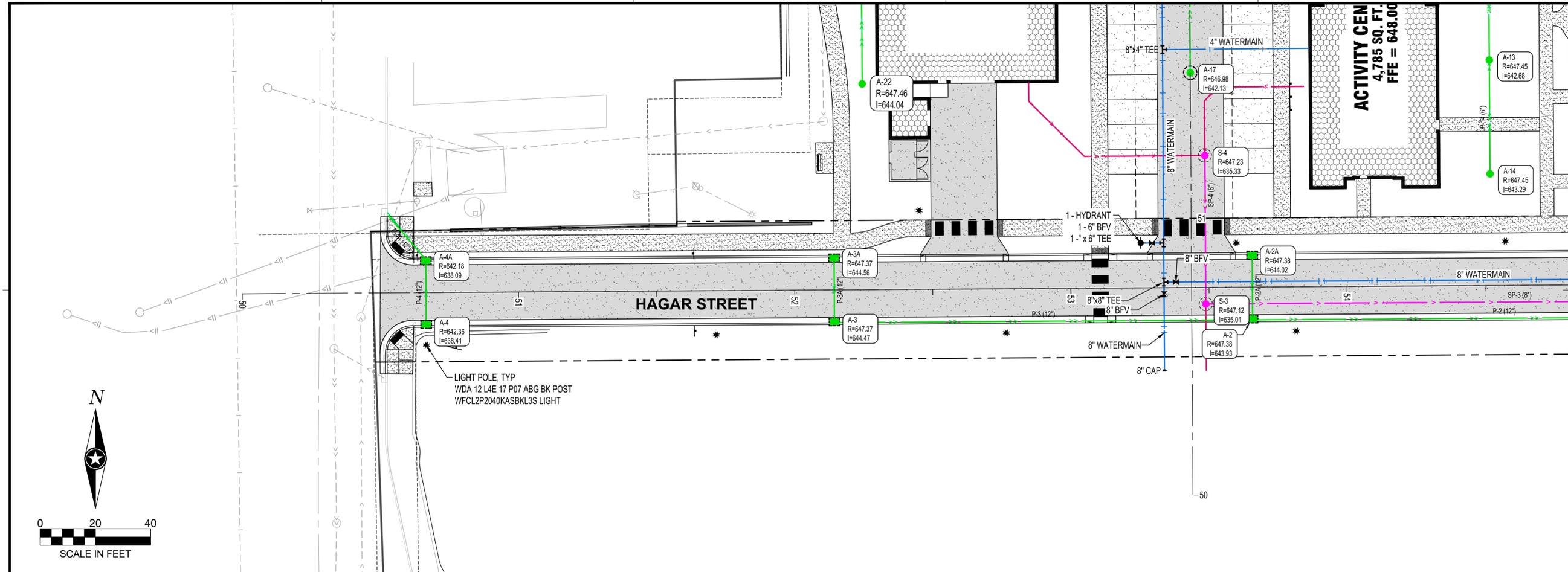
TITLE
PROPOSED UTILITY PLAN

SHEET
C3-20

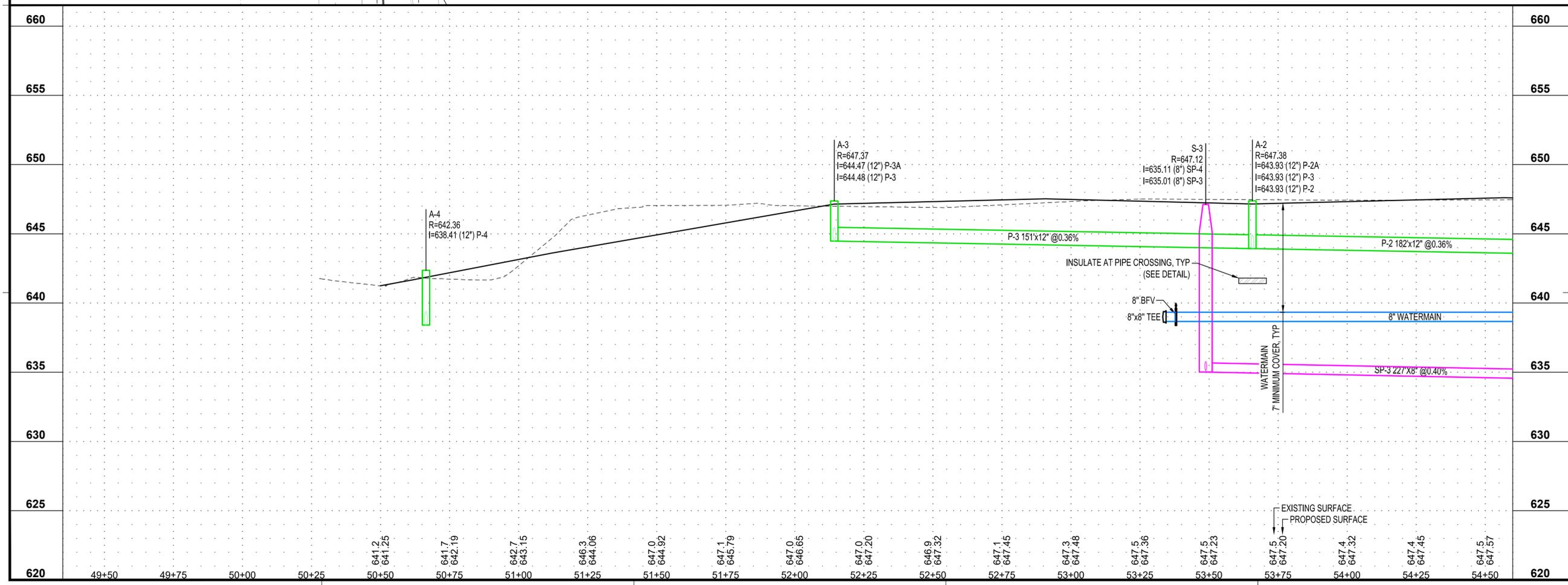
PRELIMINARY NOT FOR CONSTRUCTION



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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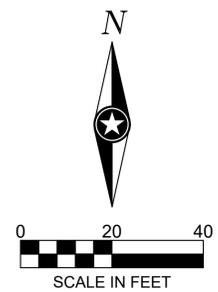
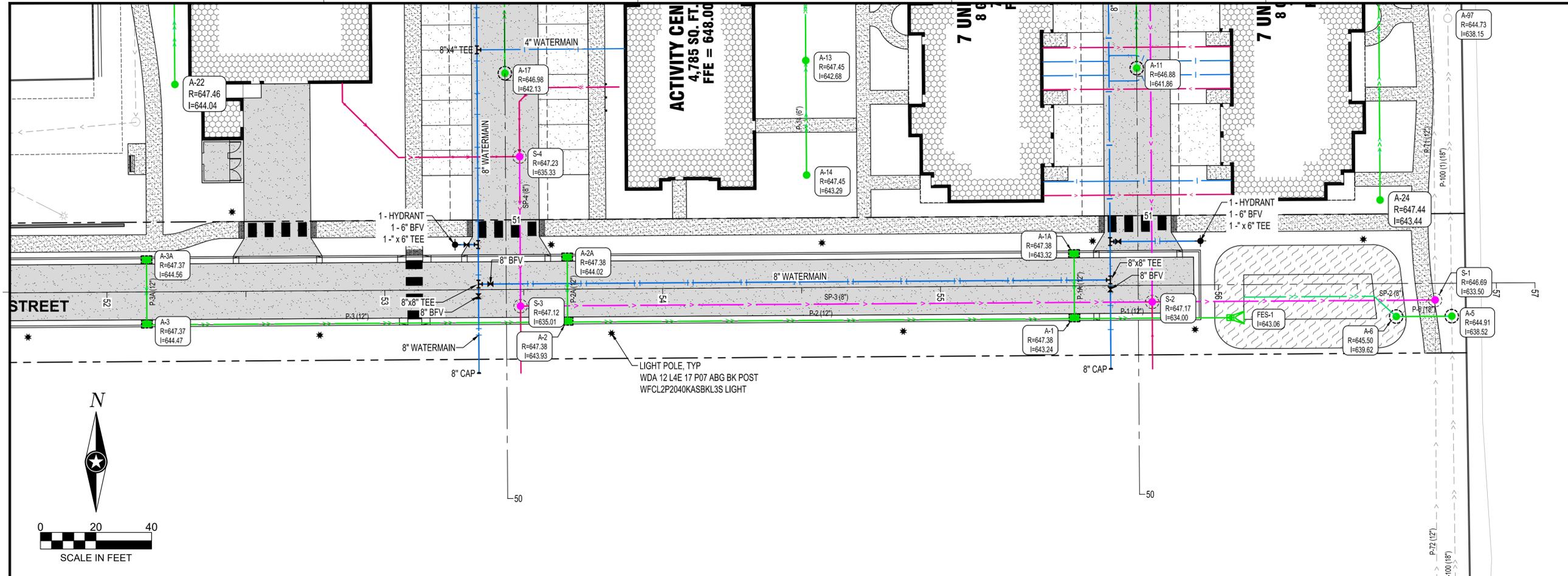
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| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C3-P&P |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | --- |

TITLE

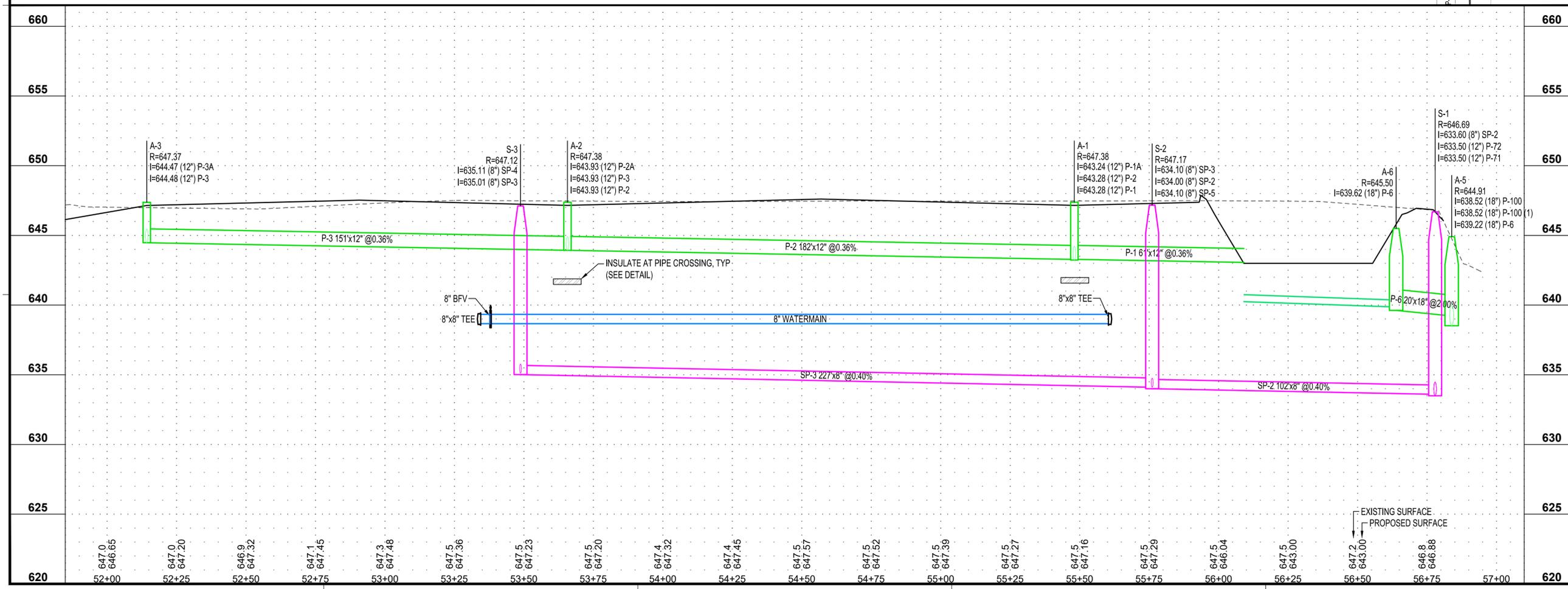
UTILITY PLAN & PROFILE

SHEET

C3-30



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
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| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C3-P&P |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | --- |

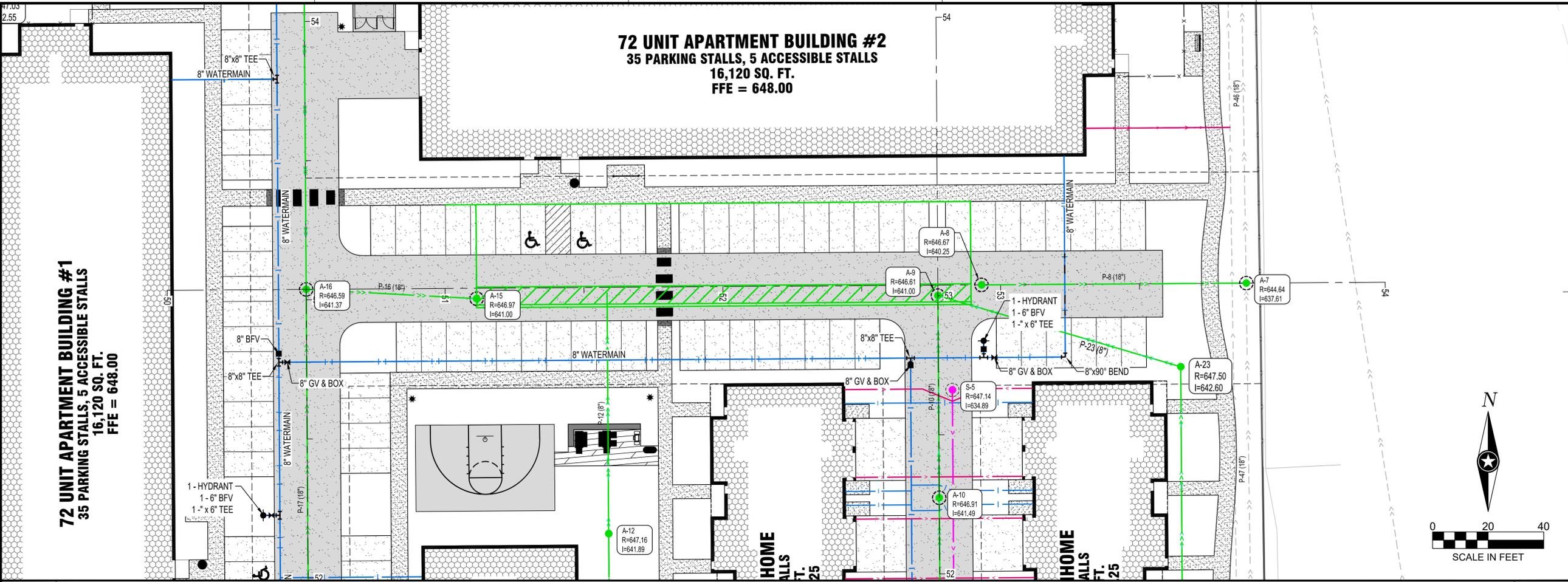
TITLE

UTILITY PLAN & PROFILE

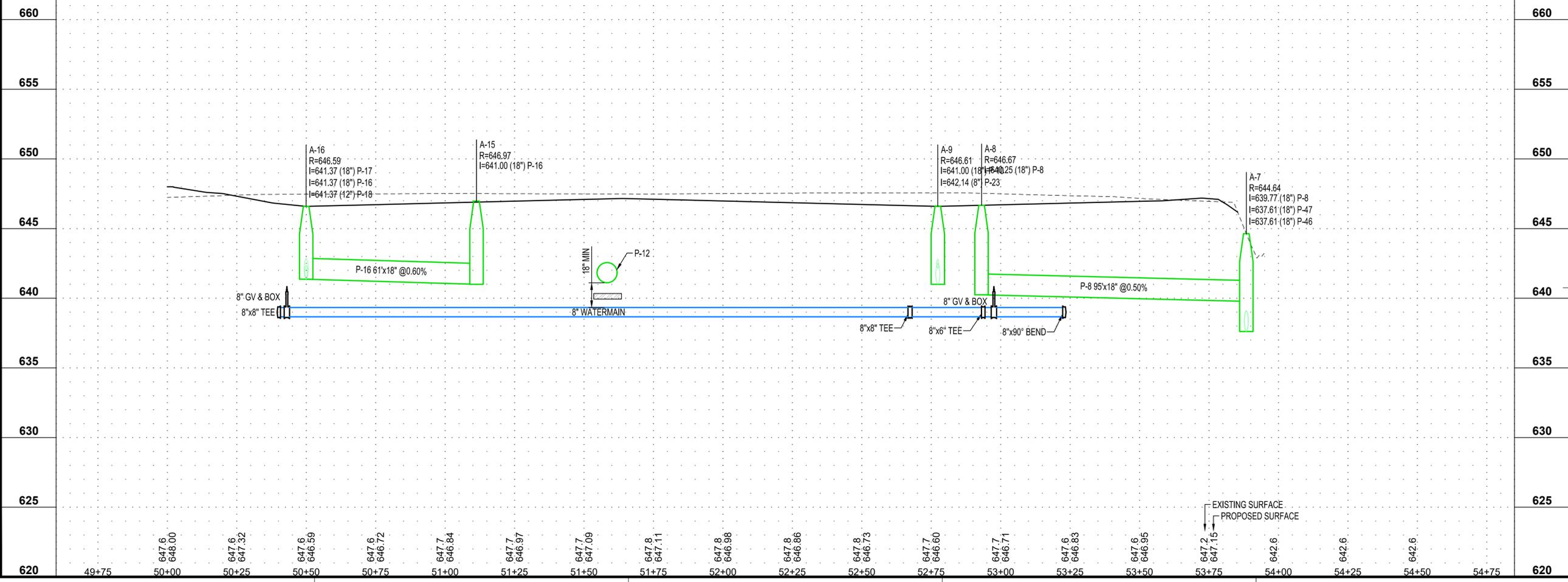
SHEET

C3-31

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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
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PROJECT NO. 20-24403
 FILE NAME 24403 C3-P&P
 DRAWN BY CLF, SMD
 DESIGNED BY KBR
 REVIEWED BY KBR
 ORIGINAL ISSUE DATE ---
 CLIENT PROJECT NO. -

TITLE

UTILITY PLAN & PROFILE

SHEET

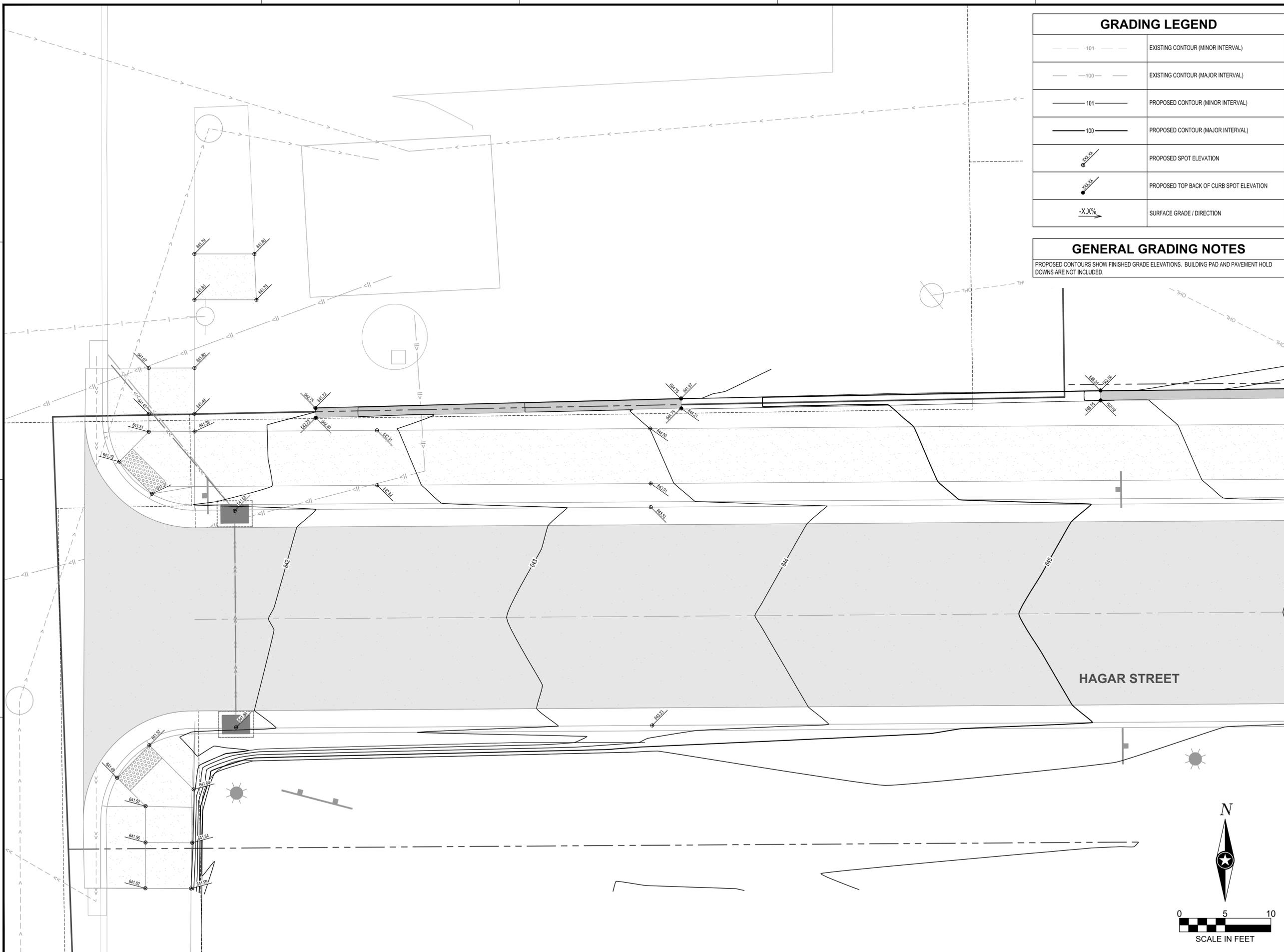
C3-32

PRELIMINARY NOT FOR CONSTRUCTION



| GRADING LEGEND | |
|----------------|--|
| | EXISTING CONTOUR (MINOR INTERVAL) |
| | EXISTING CONTOUR (MAJOR INTERVAL) |
| | PROPOSED CONTOUR (MINOR INTERVAL) |
| | PROPOSED CONTOUR (MAJOR INTERVAL) |
| | PROPOSED SPOT ELEVATION |
| | PROPOSED TOP BACK OF CURB SPOT ELEVATION |
| | SURFACE GRADE / DIRECTION |

GENERAL GRADING NOTES
 PROPOSED CONTOURS SHOW FINISHED GRADE ELEVATIONS. BUILDING PAD AND PAVEMENT HOLD DOWNS ARE NOT INCLUDED.



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PROJECT
RED CLOUD DEVELOPMENT
 LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
| | | |
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PROJECT NO. 20-24403
 FILE NAME 24403 C4-GRADE
 DRAWN BY CLF, SMD
 DESIGNED BY KBR
 REVIEWED BY KBR
 ORIGINAL ISSUE DATE ---
 CLIENT PROJECT NO. -

TITLE
DETAILED GRADING PLAN

SHEET
C4-20

PRELIMINARY NOT FOR CONSTRUCTION



GRADING LEGEND

| | |
|--|--|
| | EXISTING CONTOUR (MINOR INTERVAL) |
| | EXISTING CONTOUR (MAJOR INTERVAL) |
| | PROPOSED CONTOUR (MINOR INTERVAL) |
| | PROPOSED CONTOUR (MAJOR INTERVAL) |
| | PROPOSED SPOT ELEVATION |
| | PROPOSED TOP BACK OF CURB SPOT ELEVATION |
| | SURFACE GRADE / DIRECTION |

GENERAL GRADING NOTES

PROPOSED CONTOURS SHOW FINISHED GRADE ELEVATIONS. BUILDING PAD AND PAVEMENT HOLD DOWNS ARE NOT INCLUDED.

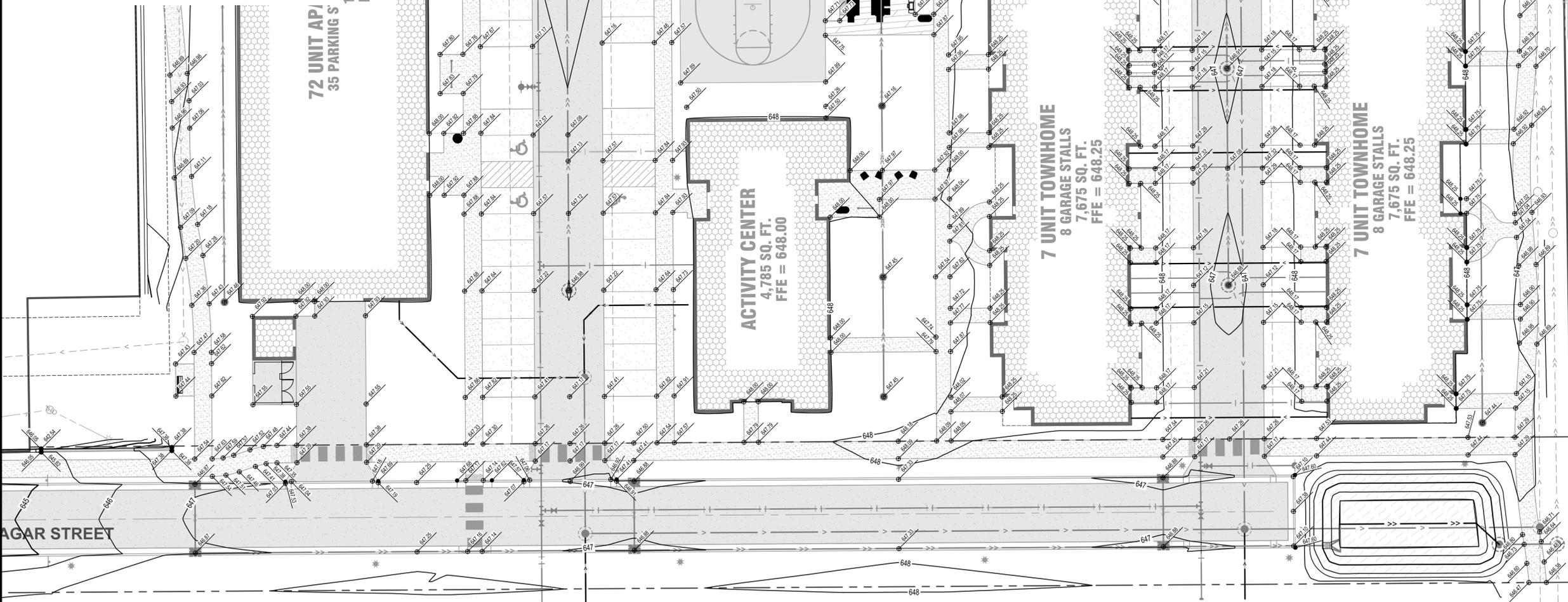
16,120 SQ. FT.
FFE = 648.00

72 UNIT API
35 PARKING S

ACTIVITY CENTER
4,785 SQ. FT.
FFE = 648.00

7 UNIT TOWNHOME
8 GARAGE STALLS
7,675 SQ. FT.
FFE = 648.25

7 UNIT TOWNHOME
8 GARAGE STALLS
7,675 SQ. FT.
FFE = 648.25



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PROJECT

RED CLOUD DEVELOPMENT

LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
| | | |
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|---------------------|----------------|
| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C4-GRADE |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | --- |

TITLE

C4-21 DETAILED GRADING PLAN

SHEET



PRELIMINARY NOT FOR CONSTRUCTION

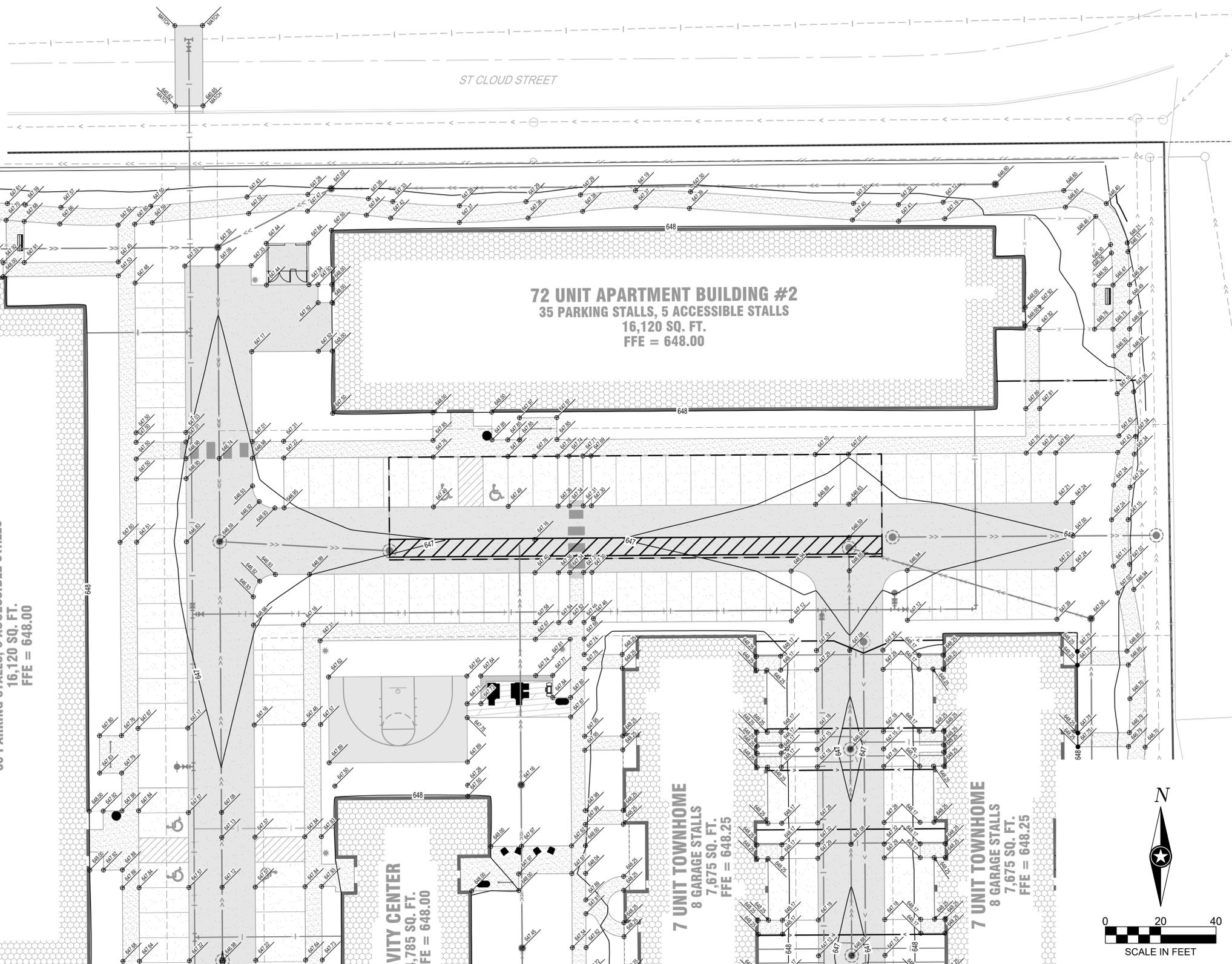


GRADING LEGEND

| | |
|--|--|
| | EXISTING CONTOUR (MINOR INTERVAL) |
| | EXISTING CONTOUR (MAJOR INTERVAL) |
| | PROPOSED CONTOUR (MINOR INTERVAL) |
| | PROPOSED CONTOUR (MAJOR INTERVAL) |
| | PROPOSED SPOT ELEVATION |
| | PROPOSED TOP BACK OF CURB SPOT ELEVATION |
| | SURFACE GRADE / DIRECTION |

GENERAL GRADING NOTES

PROPOSED CONTOURS SHOW FINISHED GRADE ELEVATIONS. BUILDING PAD AND PAVEMENT HOLD DOWNS ARE NOT INCLUDED.



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PROJECT

RED CLOUD DEVELOPMENT

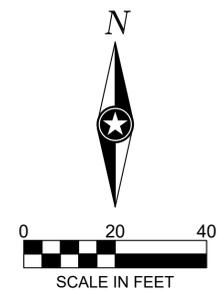
LA CROSSE WISCONSIN

| REVISION SCHEDULE | | |
|-------------------|-------------|----|
| DATE | DESCRIPTION | BY |
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|---------------------|----------------|
| PROJECT NO. | 20-24403 |
| FILE NAME | 24403 C4-GRADE |
| DRAWN BY | CLF, SMD |
| DESIGNED BY | KBR |
| REVIEWED BY | KBR |
| ORIGINAL ISSUE DATE | --- |
| CLIENT PROJECT NO. | --- |

C4-22 DETAILED GRADING PLAN

SHEET



PRELIMINARY NOT FOR CONSTRUCTION